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# *All Stories Complete*

- THE MONSTER FROM MARS (Novel—10,000) ..... by Alexander Blade..... 8  
Illustrated by Rod Ruth

A huge object landed in the jungle—and out of it came the "men" from Mars, huge red apes!

- "WA-AL, BUST MAH BRITCHES!" (Short—5,500) ..... by J. J. Palletier ..... 30  
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No prospector ever went out into the desert and made a strike like this one—it wasn't gold . . .

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He was a robot—a thing of metal, plastics, wires and tubes—but he had a brain and a secret.

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What a nice face he had—this man in the moon. The same face that appeared on a harmless toy.

- THE WANDERING EGOS (Novel—27,000) ..... by Emmet McDowell..... 104  
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When a man isn't sure of who he is, exactly, a lot of crazy things can happen—and they did!

Front Cover Painting by Robert Gibson Jones, illustrating a scene from "The Monster From Mars"

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The

# OBSERVATORY

..... *by the Editor*

**T**HIS is the month we were going to offer a partial proof of the Shaver Mystery. Well, we've made several interesting discoveries that made us change our plans. One was that someone else was going to publish our "proof," and what could be better than that! We might look like we were "looking" something up, if we did it, so, when we found out there was another angle, to appear soon under the byline of a respectable citizen of this big country of ours, and one who does not even read *AMAZING STORIES*, we felt anything we'd say on the same subject would only serve to cast doubt on what he'd say without prompting from us—and after all, *AMAZING STORIES* is a fiction magazine. Even if we say we think something is founded on fact, that doesn't make it true—and if we insisted on something like that, we'd have people believing our fiction. So, next month we'll tell you who this outside person is, and what he's going to say—and you can read it for yourself and find out that at least one thing Shaver has said for several years is very true. And that's all we've wanted to prove all along. Now we can turn the Shaver Mystery over to the Shaver Mystery Club, headed by Mr. Shaver himself, and relax. Don't think it has been an easy job to track down all the hoaxers and non-hoaxers in our effort to secure for our readers the proof they wanted. After all, it was our readers who deluged us with letters claiming Shaver's first stories were more than based on truth. We have carried the ball this far, and with next month's announcement, we complete our work for you readers who wanted proof. Editorially, we have already presented Shaver's theories twice, and we'd risk our high standard of originality if we continued. Shaver has said what he has to say—and there's no sense to saying it again. We are a fiction magazine, and fact has no real place in it, now that the fact has been proved. All our stories are based on fact. Didn't we invent almost everything, including the atom bomb? Well, it's time we went on to new fields of the future, to place them before the inventive minds of our scientists, so that they too, in years to come, will be realities.

**W**ATCH future issues for something truly amazing! We won't even try to prove the

things in our future stories, but we think you'll find that we've got something coming up that will amaze the world. Just fiction—but what fiction! Mr. Shaver, as many of you might have hoped, will play a part in it, because he's developed into a really fine writer, in addition to his situational mystery.

**T**HERE'S not a word of truth in our cover story this month, by Alexander Blade. It's called "The Monster From Mars" and it's profusely illustrated by Rod Ruth, who is rapidly becoming one of the top illustrators of science fiction.

**J.** J. Pelleter returns from a long vacation with "Wa-ah, Bust Mah Britches!" which is one of those nice little yarns with a new twist to an old theme. Here's a prospector who finds a space ship. . . .

**"SECRET OF The Yellow Crystal"** is by Guy Archette, also a favorite with you readers, and it has everything we like in a story. Plot, good characterization, fast action, mystery, and a surprise a minute.

**"DRINK Like A Fish"** is by Berkeley Livingston, which is just a guarantee that here is a half-hour of hilarious fun. Berkeley sure knows how to weave those "under-the-elf" characters of his into a science fiction story that is different from the usual run of story.

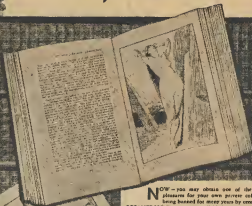
**W**E've got another secret in this issue, the "Secret Of The Robot" by Chester S. Geier, and naturally, that's like a gold seal label (the author's name, we mean). This one's too good to spoil for you by giving you clues. You readers are too smart—we tell you a little and you guess the rest!

**L**ESTER BARCLAY gives us "The Man In The Moon" which is a unique little yarn that ought to chill your blood to the consistency of soft ice cream when you read it. What flavor's yours?

**T**HE long story for the issue, and the windup, is Emmet McDowell's "The Wandering Eggo" and we recommend this story for sheer excitement from beginning to end, plus complete originality. We think you'll like this new story by a new writer. He writes like he knows how!—*Rep.*

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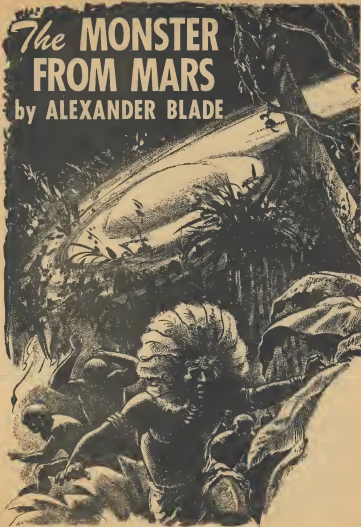
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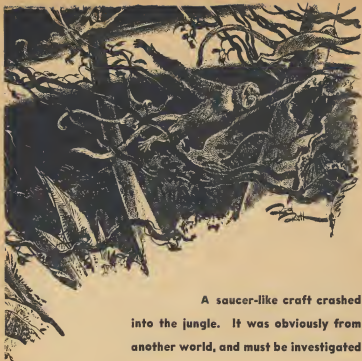
# *The* MONSTER FROM MARS

by ALEXANDER BLADE



The strange shape pancaked into the jungle with a crash





**A saucer-like craft crashed  
into the jungle. It was obviously from  
another world, and must be investigated**

**T**HE vast shape of it seemed to blot the sun from the sky. It swept in low over the horizon and swooped down onto the tree-lined jungleland. For an instant it appeared as if it would clear the last barrier of jungle giants and reach its goal, a wide stretch of grassland, but at the last it pancaked into the fringe of border trees.

There was a dull crash of falling timber, then silence. Only the frightened squawks of birds answered the sound of the crash.

Pedro Argentes stepped slowly from the protection of the tree and peered

through bright, frightened eyes toward the near foreground. Behind him the muddy river wound through the swamp-land. Forgotten was the fish he was going to spear, forgotten the spear. It hung from limp fingers. Pedro had eyes only for the half-seen shape of the monstrous metal thing there in the trees just off the clearing.

It was silent as before, yet somehow more menacing because this menace he couldn't see could be felt. A horror born of his surroundings and superstition made him draw back behind the tree again.

His eyes were trained to see behind shadows, to discern the real from the fancied. There were odd markings on the great circular thing which looked like a giant shiny *frijole*. He could see that part which lay among the trees but he could not see beyond. At last curiosity overcame some of the fear and he moved forward toward it. He was still some hundreds of feet from it when he became aware of the fact that those markings were doors or windows. And the instant he came aware of it he also realized something else. That there were people. . . . He gulped in horror and turning, dropped his spear and fled from the spot as though pursued by the devil. . . .

\* \* \*

Frederick Ward shifted the glasses higher on his thin-bridged nose with a nicotine-stained finger, looked down at the two people seated across from him and said:

" . . . So there it is. A story told by a frightened native, one Pedro Argentes. A flying saucer story not from the West. More, a fantasy of spiders huge as lions or crocodiles. What do you say to that?"

Merrit Hyland looked to his companion, grinned and said:

"What is there to say, that there is more, Horatio. . . . The facts are these. To wit, a native had too much pulque, saw visions of things only drink can bring and brought the tale to his village. . . ."

"Now just a minute, Mer," Gloria Grahame broke in. "Those are suppositions, not facts. The facts are that other natives of this same village went out, saw them also and reported the truth of these monsters."

"There are some who swear for the authenticity of the Loch Ness monster," Hyland put in sourly. "Let's not be childish about this."

"Children. Children!" Ward cautioned. "Let's get back to why I've called you in. You, Hyland, are going down to Campeche in Mexico to do some research. These reports emanate from there. Spiders are surely down your alley. It was just my thought that since you were going down there, you ought to take a look-see in on this."

Merrit Hyland placed his elbows on the desk, made an arch of his fingers and looked up through narrowed eyes at the man opposite. His rugged features were screwed up in a scowl.

"And let me tell you something, Ward," he said fiercely. "You might be the Lord Potentate in this foundation, but if you think I'm going down there and waste time on this foolishness you've got another think coming."

WARD sighed windily and came forward around the desk. He stood before the other and shook his head slowly from side to side.

"I suppose I have to break a confidence and show you proof," he said. He reached behind him and pressed a huzzer on the desk. In a moment Ward's assistant came in. Ward whispered something to the man, who then left. In a short while he returned with a package.

Ward opened the wrappings and brought to light for their startled eyes a human arm. The man and woman were versed enough in anatomy to see that the arm had been torn from its socket. There were terrible lengths of scar tissue running down the forearm, as though huge teeth had chewed at it.

"Take a look at that," Ward said. Hyland shook his head in disbelief.

"Understand?" Ward asked. "I too have never seen teeth marks like those. So I took micro-photos of the bite of a spider's mandible. They match these. . . ."

Hyland still doubted. "Do you mean to say that a spider tore that arm from some poor devil? Why—why he might have fallen into the river and had a crocodile grab him. . . ."

Ward threw both arms outward in a gesture of resignation.

"There is the scientific mind," he said. "Steeped in fact, without imagination. And I thought you were different, Merrit. That's why I wanted you to have the crack at it. Okay. I was going out there anyway. But I've got this conference coming up and won't be able to get away for at least three days. I'll manage alone. Thanks anyway. . . ."

"Wa—it a minute, Fred," Hyland snarled. "That's what I love about you. The original jumper-at-conclusions. Have it your way. So I'll look in on this village and see what they have to offer. But what about Gloria here?"

"Miss Grahame can talk for herself, thank you," Gloria Grahame said in deliberately sweet tones. "I'll be glad to go along. After all, what would you do without me? There *are* times when you *don't* know what hour of the day it is. Besides, if we do find something you'll want an *amenuensis* along."

"No! Absolutely and positively, no!" Hyland turned a flushed face to her.

"Yes, dream-man. Yes. And why not? You were taking me on this huggy expedition anyway. What's changed your mind, the hit of cadaver?"

Hyland grunted an unintelligible something, then held his silence. The truth of the matter was he had been greatly disturbed by what he had seen. Yet he could not bring himself to believe it. It simply had to be a delusion or drunken nightmare.

"Okay," Hyland said. "Come along then. . . ."

"I wouldn't miss it for the world," Gloria said. Her eyes said something



Merrit Hyland

Hyland couldn't read. He wouldn't have understood it anyway.

"Very well, then," Ward said, obviously pleased by the turn of events. "There will be no change in your plans, Hyland. Only try and do some sort of investigat. . . ."

"I said I would," Hyland broke in.

"Good. I'll be seeing you, then. . . ."

"**H**OW long do you think it will take, Moas?" Reet asked.

"Hard to say," Moas said. "I'll keep trying. Of one thing we can be sure, they saw us fall."

"Blasted engine!" Reet grunted. His eyes, a foot in diameter, moved slowly from side to side. Only Moas knew the intricacies of the complicated engine and Moas had assured him the

delay was only temporary. All this was well but they had a mission to perform. There weren't enough of them to accomplish any real good. That was why he had been sent down, to reconnoiter. . . .

"Have we taken any more of these odd creatures?" Moas asked. Two of his forelegs were busy in a delicate adjustment of a balance.

"It seems they're good only for food," Reet said. "It is obvious they are of low intelligence. . . ."

"H'm. Well, perhaps the scouts will bring some of higher intelligence."

"Small chance," Reet said.

The small monoplane circled lower and lower until it barely cleared the treetops. Gloria Grabame peered searchingly through the window on her side and said:

"We can't be too far, Mer. I thought I spotted the river a short while ago. Wait. . . . Down there. See. . . . Now we've passed it. But I saw a flash of light as if it were reflected from something metallic."

Hyland's brow was corrugated in a frown. His eyes were slitted in concentration. He too had thought he had seen the same flash of light and from the same spot Gloria had pointed out. He circled the plane still lower trying to bring it as close to the scene as possible. Now they were grazing the topmost branches. . . .

It happened with the suddenness of a striking adder. A slender tube-like tentacle shot out from the midst of the branches and fastened itself to the landing gear and pulled it down. They fell with the speed of a plunging elevator.

Gloria would have dashed her brains out on the instrument panel if it hadn't been for Merrit's protective arm. As is was they were badly shaken up.

Seconds passed like the hours of doom. They were in a world of twilight. All about them was the jungle, green gloom, terrible and terroristic. Suddenly Gloria screamed, a horrible sound of terror mounting until the whole cabin echoed with it. Merrit whipped toward her, then turned his glance to where her wide-staring eyes were set in a hypnotized stare.

Some twenty feet ahead of the plane's nose was the most horrible thing he'd ever seen. A monstrous hairy shape was crawling toward them on legs which were like fuzzy-tipped timbers. The thing had a face, if one could call it that; at least there were a pair of eyes, great saucer-like things set on each side of a parrot beak and below it mandibles like great crushers of bone. It was a spider, but such as Hyland could not believe existed except in the imagination of science-fiction writers.

"Mer! Mer. . . . Do something. . . ." Gloria moaned and buried her face in her hands.

**H**YLAND had the quick perception of a trained scientist. His senses had taken in many things in the short time he had before his fingers flew to the starting switch. He had seen that they had been dragged into a gigantic spider web whose lines were like the rope hawsers of a battleship. The plane was fairly enmeshed in the web. But somehow the nose and propeller were free of the tentacles of gooy substance.

Then Hyland switched the motor on. It seemed as though years went by, and in that time the spider was within a foot of the plane. The roar of the motor's starting was like the call to dinner for a hungry farm hand. The prop turned slowly, then with accelerating speed until it was a blur before their eyes. And in another instant the spiders two forelegs reached forward

to rip through the glass.

They heard the sound of the thing even above the roar of the motor. It was like a wild, human scream of pain. And like something human it lifted the two forepaws or legs with which it had been about to embrace the plane's nose. The propeller had done devastating work. Either the spider hadn't seen or understood what those blades were. But it had struck the two legs directly into the path of their whirling circle and the blade had sliced them neatly in two.

Still screaming terribly, the creature hacked up until it was out of sight.

"Glo. Quick! Out of here. . . ."

She seemed paralyzed from fright. Merrit undid her belt and lifted her bodily from her seat. It wasn't until he had dragged her to the door that she realized the spider had gone. She snapped out of her stupor then. There was a patterned arrangement of vine creepers almost at the door. Gloria started to reach for one of the thick strands, but stopped with her hand outstretched at Merrit's shout of warning:

"Don't! That's the spider's web!"

She jerked back as though the thing was ablaze and clung to Merrit like a leech. He had taken the situation in at a glance. The instant the immense insect had caught his prey he had begun to spin the web. In the few moments of drama the web was almost complete. But because of what had happened the spider hadn't quite time to finish his spinning. There was a shallow opening between the branches. Merrit and the girl scrambled through that opening.

Merrit's brain was hitting on all cylinders. The spider had been badly hurt but not mortally. It would soon be back. It was very probable also, that it would bring others. They had to get out of this particular neighborhood, but fast.



Gloria Grahame

The ground they landed on was soft, spongy, typical jungle marshland. The brush was thick with hush and creeper. Flowers grew in thick profusion and perfumed the air to a sticky sweetness. But Merrit had neither ear for the wondrous sound of birds, or nose for the odors of tropic flowers. He saw, weighed, and appraised their chances of escape by the reality of physical barriers, trees, vines, land and water.

He had taken a mental fix of their position at the very instant of their entanglement in the web. To the northwest some hundred miles was the lowland of Tabasco, to the southeast the state of Campeche. Though the distance to Villa Hermosa, the nearest town was at least fifty miles off, and though there probably were villages closer, the villages would have to be in

the heart of the jungle. They had some ten miles to go in the direction of Villa Hermosa and they would be out of the jungle. It was the only direction which would provide some safety.

**A**BOVE them the roar of the motor was being accompanied by other sounds, ripping tearing ones. The vibration was tearing the plane loose from its prison. Merrit grabbed Gloria's wrist and started off at a slithering run through the muck. They hadn't gone more than a hundred yards when there was a terrific explosion and a sheet of flame hurst from the spot they had just quitted. Merrit had been right in his supposition.

Their single thought had been one of escape. In the cabin of the small plane were two instruments of indispensable use in the jungle, machetes. Both, man and woman, had guns in the holsters strapped to their belts and clips of ammunition in their pockets. But Merritt had an idea it was going to take more power than their pistols possessed to stop these insect giants should they meet again.

Merrit was keen-eyed, sure-footed from the years of jungle work. But the girl was a hindrance. She slipped in the muck, somehow always managing to find the thorniest creeper in which to entangle herself, the slimiest mud in which to slip, the lowest branches into which to stumble. Their progress was slow, painful, creeping. And if all that wasn't bad enough the thought of the terror which might be hard on their heels rode, a horror on their brain.

How long they ran and how far they'd gone before Gloria gasped: "Mer. Please . . . Wait-a-minute. I'm fagged," they had no idea. Merrit looked behind him, saw and heard nothing, and placing his hand on his knees bent and gulped in air. The

girl leaned against the bole of a jungle giant, her head hanging low, almost against her chest, breathed in long, slow gasps.

After a few seconds in which he recovered his breath, Merrit stepped to her side and said:

"I'm sorry, kid. But we can't take a chance and rest too long. I know this is going to be tough on you but we've simply got to get out of here. . . ."

Gloria Grahame was a woman, a glorious creature of beautiful proportions and lovely face topped by a wealth of hair the color of molten gold. At this moment she looked like a witch out of a production of Hansel and Gretel. Mud had caked on her forehead and right cheek. Her once-white breeches were slime-covered and slivers of cloth flapped disconsolately along one thigh. A thorn had caught her blouse and ripped it almost from her body and her bosom was bared almost completely. Her hair was in disarray and lay in wild profusion of curls about her face. At that moment Merrit decided she was the most beautiful woman he had ever seen. Some instinct, however, told him not to say anything about it. Instead, he went to her, placed his arms about her shoulders and said in gentle tones:

"I'm sorry, honey, that this had to happen. . . ."

From some inner core of courage, from some fount of fight she hadn't thought she possessed, Gloria drew sustenance.

"Don't be sorry, baby. I was frightened before. Now, I'm tired as heck, and dirty as an urchin, hut full of the old fight. As you say, let's get out of here. . . ."

Again Merrit led the way.

**I**T HAD been fairly late in the afternoon when they had been entrapped. The sun, fighting to get through the

tangled and thick foliage was waging a losing battle now. The green gloom was darkening to black shadow and deeper darkness without shadow. Merrit had several worries now. He had to get out of the open. For one thing, this was malaria country. Back there in the plane in the small case he had brought along for such an emergency, lay the case with the tiny capsules of anti-malaria toxin. Even he, with many years of living in the jungle behind him, knew the treachery of sleeping in the open. There were a million biting insects which came out at night and would find the warmth of human flesh an inviting sanctuary. Worse, though much more rare, was the wild beast, a jaguar, or the snake. . . . No. They had to find shelter.

It was a race against the inexorable darkness and its accompanying terror. They won out in the short twilight of the jungle. As it was, it was only the merest chance that Merrit, using his faculties to the fullest, first smelled then saw the tiny jungle village.

The village consisted of a dozen straw-thatched huts, a common compound and several canoes drawn up the muddy shore of the river which cut across one end of the village. But of life there was nothing.

"Oh, Lord!" Gloria gasped as they peered from behind the shelter of the brush fringing the village. "What is that horrible odor?"

"Decaying flesh," Merrit said softly. "Probably human. Well, the place looks deserted. Might as well see what there is to be seen."

The village was not alone a place of refuge; it was also an oasis of light. The moon was brilliant, giving a light that was as good visually as sunlight without the brightness. Merrit moved from one hut to another until the last had been investigated. As he had sus-



Frederick Ward

pected when first he saw the place, it was deserted, though why was a mystery. Whatever the reason, it had been one which caused a precipitous rout. Primitive stoves and fireplaces still bore pots in which beans and corn had once simmered. In one hut, the most luxurious; it bore a table made of wood-cratting, there were plates of food still on the table. The same reason for the exodus came to both simultaneously.

"The spiders! They must have come," Gloria said.

"The spiders," Merrit echoed. "Yes. They came all right. H'm. I don't like that. They might come back."

"Uh, uh," Gloria said. "I have a feeling they won't. This food is at least a day old. . . ."

"And," Merrit broke in from the fireplace where he had gone to look at

the ashes, "these ashes are perhaps older. I think it's safe enough to stay the night. Now let's find a place to stay."

There were sleeping mats in a corner of the single room. Hyland took one and gave another to the girl with the admonition, "Watch for bugs."

She laughed and he was quick to note that the laugh was natural in sound and not forced.

"At least they'll be the small kind," she said.

"Good night," he called from the opposite corner.

She mumbled something and he arose and walked to her side. She was looking up at him. On her lips was a smile of infinite sweetness. He found it the most natural thing in the world to do; kiss her. Straightening, he went back to his mat. And when he called a second, "Good night," her answer had a "Darling" at the end of it.

FREDERICK WARD slapped fretfully at his perspiring brow with a kerchief which had once been fresh and white but was neither. Damp spots made large dark circles under his armpits. He held a map in one hand while he gestured with his free arm.

"Now look, Harrison," Ward said. "They must be in this region here. There is no word of them from Balcan or from Felipe. We know they left Villa Hermosa two days ago. We'll simply have to fly back and forth above this region in ever-increasing narrower circles until we spot either the plane or its wreckage."

"With the helicopter," Harrison, Ward's assistant, said, "it will make the whole business a lot easier than with another plane. How long before they gas the ship up?"

"Another hour," Ward replied.

Harrison looked up at the cloudless

blue.

"Good. We ought to have a minimum of nine more hours of light. We'll need it too. The moment shadows lengthen out here, observation becomes impossible."

They both turned at the sound of a shouting voice from the direction of the Villa Hermosa airport. Their ship was ready for take-off. . . .

Merrit Hyland awoke to the odor of cooking food. He sniffed appreciatively and rolled over and sat erect.

"Aah!" he said, smacking his lips loudly. "The lady knows how to cook."

"And many other things," Gloria said from the direction of the fireplace. She turned an impish look in his direction and wrinkled her nose at him. He stepped to her side.

"*Frijoles*, eh?" he asked.

"Well, don't sound so disappointed. After all, ham and eggs would be a bit hard to get; that is until I get next to the village grocer."

"He'd better not be good-looking," Merrit said.

"Jealous already," she said. "And here we're not even married."

"I'm going to remedy that soon as we get out of this pest-hole," Merrit said.

A silence developed as an aftermath to his words. Not until they had swallowed the last of the *frijoles* and drank the water she had boiled, did they speak again.

"I guess we'd better be on our way," she said.

His eyes had been narrowed in concentration. He nodded his head several times at something he'd been thinking and said:

"I think I'll take a look at that thing out there."

She followed the line of his pointing finger which was directed out the door-



way and saw that at the far edge of the village, on the very edge of the shore, there was a heap of something. That the something was dead was apparent. The wind was now from that direction and she felt nauseated from the odor coming toward them.

"I'll go along," she said in a steady voice.

"Might be a messy thing to look at," he cautioned.

"After yesterday's horror, I'm going to write Boris Karloff letters of derision," she said, and grinned up at him.

IT WAS the carcass of an immense monstrosity. The thing was covered by millions of insects winged and crawling. Maggots swarmed in an unholy feast upon it. Merrit suddenly threw his right arm outward as a barrier against her further progress. He had seen a long, dark shape that could only mean one thing, jaguar, digging among the crawling vermin.

The wind must have shifted because suddenly a wedge-shaped head lifted and turned in their direction. The growl of the animal came distinctly to them.

"Merrit! Let's go back," Gloria said, grasping Hyland firmly by his forearm.

The look of speculation in the man's eyes hardened to conviction as his hand slid down to the strapped holster. He slipped the catch and pulled the heavy-calibered pistol from its pocket.

"I think he'll run," Merrit Hyland said. "I'm not going to try to hit him. Just whistle one past his nose. If he's heard a gun before he'll high tail it for cover."

The gun roared and jumped in his hand. There was an answering roar from the jaguar, but though it was a sound of rage, the animal only lifted its voice once more and slunk off to the jungle.



Harrison

"Thank the Lord he wasn't hungry. If he hadn't feasted or was still hungry," Merrit said, "we'd have had trouble."

The odor of corruption was overpowering in its intensity. They had to stand and look from several feet away, so nauseating was it. The shape was indefinable but huge. It might have been one of many things, but that it wasn't a human, Merrit knew. The carcass was swollen to many times its original size of course. And with every passing second it was becoming less and less a shape, just a *thing*. . . .

"Look!" Merrit said, pointing to several objects near it. "Spears! And there. . . ."

"Bones. Legs, arms," Gloria said and repressed a convulsive shudder.

"I think I get the picture," Merrit said. "It came to the village and caught several of its inhabitants. Most of the others ran from it but there were some who stayed and fought it. That's where the spears come in. They fought it and killed it. But in the terror and fear that this horrible thing had others of its like near, they ran also. Hang it! I wish we'd come sooner. I'd have liked a close examination of the thing."

And, as though in answer, Gloria's voice rose in a scream that had had its counterpart in the cabin of their plane. More it was for the same reason. Merrit whirled and saw where her terror was born in.

**L**UMBERING toward them on its six legs, was the largest spider Merrit ever saw or wanted to see. It stood ten feet high and the top joint of its legs rose another foot above the furry head. The weight of it must have been tremendous because for all of its legs, it wasn't coming very fast. Two antenna-like projections waved back and forth toward each other from either side of and just above the saucer-shaped eyes. Merrit would have sworn the sound he heard did not come from the creature's mouth, when he heard:

"Do not run! There is nothing to fear. . . ."

Maybe there isn't, Merrit thought as he turned and grabbed Gloria's arm and started for the cool, green depths of the jungle, but I'm not staying to find out. He turned for a last look, and redoubled his speed. A slender string of waxy stuff had shot out from the spider, like the line from a fishing reel, and was falling toward them in a short arc. Had he and the girl delayed for a single second, they would have been trapped in the first strand of the web.

The jungle enfolded them in its embrace. But though they used all their strength in just running, their efforts seemed to no avail. The spider had more legs and better means of travel. For all its weight it could use the trees as stepping stones. And once more the slime and tangled underbrush sapped the strength of the two humans as it had done the afternoon before.

"I'm beat out," Gloria gasped after a while. She stumbled as she said it, and Merrit had to grab her quickly before she fell.

His teeth sank into his lower lip and drew blood so sharply did he bite. There had to be a way of getting out of this, he thought. There were crashing sounds behind him, and shouted words. He lifted his head and listened.

"Hoab! Sanor! Gaitha! This way. . . ."

**H**E TURNED this way and that trying to find a way out. He whirled toward a sudden movement in the brush close by, whipped out his gun and blazed away at the sound. Before their startled eyes a jaguar broke and ran past them. Merrit's mind worked with the speed of light.

"Quick, honey," he bent and whispered to the girl. "Under this bush."

He dragged her forward toward it and nestled by her side. They weren't an instant too soon.

From a direction at right angles to the path they had been following came another of the spiders, and from ahead came a shout:

"In the web, Gaitha. A prisoner."

The spider lumbered toward the hidden voice and following it came another but this one from the same direction the humans had come from. This one lumbered off after its counterpart.

Gloria started to speak but Merrit placed a cautioning finger against her

lips. He removed it after a second and used his hands in sign talk. Placing the tip of his index finger to his lips first, then to his ears, he shook his head as though saying they could not hear. Then putting it against his nose he shook his head to show the creatures had no sense of smell. Then pointing to himself and the girl, he placed his finger against his lips in a sign that they should hold silence.

Suddenly from ahead came a series of wild roars. Mixed with it were other sounds, screams and sounds of rage or pain. For a few seconds the cacophony of sound came to them, then silence descended on the jungle.

They waited as patiently as they could, straining their ears for some sign to show either the coming or departure of the things, but all they heard were the calls of birds, and the huzzing sounds of winged insects. But though Gloria tired soon of their cramped position, Merrit held her close until he thought they could venture forth with some degree of safety.

And even with their first steps, Merrit brought his head close and whispered in low tones:

"Step carefully. Make for the river bank. Somewhere along its length we should find another village."

Merrit had not lost his sense of direction. Moving carefully, he and the girl edged along a faintly etched trail toward the water. Nor was he wrong. It wasn't more than a few minutes later that they reached the muddy, curving banks. But here they were faced with a new terror. Literally millions of mosquitos and winged insects attacked them. There was nothing they could do but bow their heads, hold their arms close to their faces and trot along. Soon they began to show the effects of the insect bites. Their faces swelled in dozens of places until they looked as

though they had broken out in aggravated cases of mumps.

In the depths of the forest all had been cool, though damply so. Here, the sun struck the water and reflected in a thousand terrible rays of heat. Unprotected as they were by helmets, the heat soon began to take effect. Merrit kept a close watch on Gloria. She was the weak one. He held her hand, hot and damp with heat and perspiration. Suddenly it went limp and Merrit knew she had about reached the limit of her endurance. His arm went around her and half-carrying, half-lifting her, he managed to stagger toward the green depths of a sheltered nook not far from the edge of the water.

There were several strands of grey-green fibrous branches athwart their path. They looked like streamers sent from the trees. Merrit threw out an arm to cast the nearest aside. Too late to save himself, he realized that these streamers were not floating branches. They were the strands of the web the giant spiders wove. And he and Gloria were now prisoners. They had been outwitted. Nor was their fate far from them. Ahead, coming from the tangled depths of the tree from which the web was being woven, came crawling the terror they had tried so hard to escape. . . .

"**H**OW goes it now, Moas?" Reet asked.

"As badly as before," the chief engineer said. "I have come to the conclusion that we are stranded. . . ."

Reet's antennae, the means of their communication waved about like the frightened wings of a moth. Sounds which were transposed into words came to the receiving end of Moas' antennae.

"Blast it! Blast it to the devils in Groh's pit! They can't have lost trace of us. . . ."



Merrit grabbed Gloria's arm and started for the tangled jungle . . .

"They haven't. But we have," Moas said. "I mean by that, that though they know where we are, they might not be able to get to us. Unless, of course, the Most High evolves a means."

"I don't understand," Reet said. "We had always managed before."

"It has to do with the atmospheric density. The proportions are different here. Yet the density on the surface of this planet is ideal for our life. Which reminds me. What of these strange beings the scouts have reported finding? Is it true they have a means of flight? Surely then, they have a superior intelligence than those which we have found previously?"

"They have. Their very speech shows it by its complexity and choice of vocabulary. I have ordered they be taken prisoner. If they do not prove to be amenable to our suggestions, we shall have food at least."

"Have any other of our scouts run into the kind of trouble Hutu found?" Moas asked.

"No, hlast them!" Reet was infuriated at the thought. "If we could but rise above this land I would blast them from the face of this planet."

"I think the Most High might have such plans, that is if a general landing proves feasible. Of course, being out of communication with the mother ship,



... there were cracking sounds behind, and shouted words

we can only speculate about their activities."

Suddenly Reet's antennae stood stiffly erect away from his head. Moas knew that he was receiving messages from the scouts sent out a while before. He waited patiently for the messages to come to an end.

"They have captured the two," Reet said exultantly. "It shouldn't be long and we can see and hear these odd creatures."

"Good! Do not forget to call me," Moas said.

"Don't worry about that," Reet said. "You just get the engine to function. . . ."

"WE DON'T have too much time left, sir," Harrison said.

Frederick Ward looked at the sky, peering through eyes slitted against the still strong light of the dying sun and said:

"Still two hours. Hang it! They just couldn't have disappeared as though in a void. Surely there must be some trace, some small part of their plane. . . . H'mm! Harrison!"

"Yes, sir?"

"Set the 'copter down there. At the edge of the jungle near those twin plantains. . . ."

The helicopter landed with the smoothness of its kind, without a jar

to disturb in the slightest, the equilibrium of its passengers. The cabin door opened and Ward alighted. Sticking his head back in he said:

"Break out those high-powered carhines we brought. Also the machetes. Don't forget the anti-malaria toxin."

He backed away as his assistant came through after him. Ward and Harrison made sure their pistols were ready for instant action, threw the carhines over their shoulders by the slings, took up the machetes, and started hacking their way into the jungle.

"If you don't mind my asking, sir," Harrison said as he followed the other, "why did you want me to land here?"

"There is a village I want to look at," Ward replied. "I saw something strange about it from the air. Thank goodness we were able to hover over it. I think you were looking at something else at the time, but I saw a heap of something on the ground which interested me. From the air I'd swear that peculiar shape was the skeleton form of a gigantic spider."

Harrison gave his superior a peculiar look of disapproval. Gigantic spiders! Harrison knew Ward was probably the world's most famous entomologist. But spiders the size of elephants. Shades of Jonathan Swift! Still shaking his head at the foolishness of the other, Harrison continued to follow.

It took them perhaps ten minutes of work to reach the village. Before venturing into it they slung the carhines down for instant use if necessary.

"I'll go first," Ward said. "You cover me. Shoot at the first sign of anything suspicious."

"Right, sir."

Ward stalked straight down the center of the village. Behind him, Harrison ran from hut to hut, always managing to keep the other in sight. At last Ward reached the area where he

had spotted the skeleton. Turning, he waved for Harrison to come up. Together, they stood and looked at the thing.

"See," Ward said pointing. "Those forelegs. Four of them. Walking legs. And the rear ones; they are spinning legs. But of bone. And look at the skull, bony, large, with brain capacity. These creatures have the wherewithal to think. The thing must have been ten feet high with a spread of perhaps twenty feet between its legs. Unbelievable. . . ."

The dying rays of the sun struck a sliver of glittering light from something on the ground. Ward, still lost in the skeleton of the spider, did not see it. But Harrison did. He stooped and picked the object up.

"Sir! Sir," he shouted excitedly. "Look at this. . . ."

Ward turned and peered down at the object in Harrison's palm. It was an empty cartridge case.

"From one of those new, high-powered automatic pistols, the ones which eject empty shells. Hyland and Miss Grahame must have been here."

"You're right. Of course you're right," Ward said quietly. "Let's go through these butts. Perhaps they left some sign of their visit."

THEY found it in the hut where Hyland and Gloria had spent the night. Gloria had managed to mend her torn blouse as best she could by tearing strips from the torn part and binding her breast with them. She had torn a part of the collar off. It was this part which they found. It was the proof they needed. For on it was a tag which bore the inscription, Marshall Field and Company, Chicago.

"We'll circle the village," Ward said as they came out of the hut. "Hyland and the girl wore boots. These natives

wear sandals or go hare-footed. The ground is soft and their prints should show up. . . . You go down along the river bank. They might have headed for it thinking to follow it."

But it was Ward who spied the indentations of their boots. He also saw the tracks of something else and instantly identified the markings.

"God!" he whispered hoarsely at sight of the huge, characterless imprints. "One of those things was after them." He called Harrison to his side and the two stood for a second, looking down at the ground.

"See," Harrison said pointing. "They were running. Right into the jungle. . . ."

Ward's lips pressed firmly together. There were but two alternatives. Either go back to the helicopter and fly for help, or go into the jungle after them. Ward made up his mind on the instant.

"All right, Harrison," he said. "I'm going in. Coming?"

"Yes, sir," came the immediate reply.

They lost the tracks the instant they entered the brush. But the path wasn't hard to follow, because, due to the size of the spider, it had ripped through the brush. But after a half hour's tracking Ward and the other came to an impasse. Ahead of them was what looked to be a net of something stretched out directly across their path. There was something hanging in the net.

"Look sir," Harrison pointed. "It's a jaguar, or what's left of him. Those spiders must have laid the net right across the trail and the beast ran straight into it."

"So they're flesh eaters," Ward said. "H'm. Let's stop a second and reason this out. Obviously the spider who was after Merrit and the girl was not the one who spun this web. If he were that swift to be able to get ahead of them,

then he was also swift enough to have caught them.

"Now. To reason this out we've got to use all the facts. So we go back to the first fact, that a native saw a circular ship fall from the sky and from it emerged giant spiders. Which fact brings out this conclusion. That the spiders can think and have some means of communication. From this we can deduce that there were more than one of the creatures on the loose. And from there we can assume that the first, spotting Merrit and the girl gave chase, and warned his fellows what had happened. Now I'll wager my life that we will find similar webs hanging to either side of this path. I'll strike off to the right for a short distance and you go left. Five minutes should prove my contention. We'll meet here. . . ."

Ward was proven right.

But Harrison had something else on his mind.

"Maybe we ought to be turning back, sir. I don't think we have too much of daylight left."

Ward thought for a few seconds, then said:

"I guess so. We still have better than an hour. I hate to give up, though, especially when we've found that they're not far off. And worse, that they're in danger. Tell you what. Let's strike off toward the river. Merrit is both clever and quick-witted. Perhaps. . . . Another half hour will still give us time. . . ."

MERRIT whirled and, shoving Gloria ahead of him, started to run. But this time it was too late. The slender coil spun out toward them and encircled them both. Another came down and still another. Somehow, Merrit managed to keep his right hand free. But the girl was hound tightly to him. She smiled up at him and all

fear was wiped from her face.

He bent and kissed her, quickly and hard.

"Looks like this is it, honey," he said.

There was the slightly metallic sound of the spider's voice calling to his companions:

"I have them."

As though they were at the end of a pulley, Merrit and the girl were drawn upward. By the time they reached the spider they were wrapped as though in a cocoon. Everything hut Merrit's right arm.

The huge eyes examined them closely as they came up the web. There was nothing of anything human in their depths. They were cold and expressionless as a pair of stones. There was a flash of motion from two of the spinning legs and the cocoon was cut free. Then, bearing his prisoners aloft, the spider scurried down the web. He waited for his companions. There were three of them.

Their antennae waved wildly in a cross current of talk:

"Good! Reet will be pleased. . . ."

"Yes," said another. "And so will the Most High. . . ."

Their captor exulted:

"Perhaps I will be made one of the Lesser Legion. . . .?"

"Ho, Hutu! Glory will be yours for this."

"Let us return, then," the one called Hutu said.

It was then Merrit acted. His right arm was free. The instant the strand began to entwine about them he had whipped out his pistol. There was but one thing to do. The three companions of Hutu stepped into the lead. Hutu was some twenty feet behind them as they started back to their ship. Perhaps the double load was a little too much for the spider but after a hundred yards, he was fifty feet behind.

Merrit raised the pistol and took careful aim downward at one of the huge eyes and pulled the trigger. A great gush of odorous ooze shot out of the hole which appeared in the spider's head. It was black in color and it drenched the man and girl in its vile flow. Once more the pistol roared and the other eye fountained in black slime.

Hutu collapsed to the ground. But before he did he dropped his precious hundle. The shots brought the other three on the run. They looked at the body of their companion, then began to scurry around looking for Merrit and the girl. The two had fallen into a tangled mess of moss. Before the other spiders got to the scene Merrit had somehow managed to burrow deep into it. He suspected that because of their height the spiders could not see much of what lay on the ground. He was right. But he hadn't planned on their ingenuousness.

The instant they realized their prey was gone, they began a systematic hurrowing with their four walking legs. Up and down in narrowing furrows they marched. Back and forth, ever drawing closer to the human cocoon they came. All that was to be seen of the two humans was Merrit's extended arm with the pistol stuck out.

Gloria had been trying desperately to free herself of the slimy coil. She had to give up with a moan of despair.

"I can't. It's so sticky, Mer," she whispered.

"I know. I tried before. Looks like this is really it. The way they're going about it, it won't take more than a couple of minutes before they find us."

**B**UT Merrit was wrong. It seemed impossible that thorough as they were, that they should pass them by. But time and time again, sometimes when they were right on top of the





*They ran frantically toward the helicopter*

two, but always something either distracted them, or the marching feet just missed. If there was one thing they possessed, it was patience. Time went by sluggishly. The forest grew dark and still the spiders marched their patrol. All movement had died in Merrit. Now and then he would flex his fingers slightly. If circulation stopped in that arm Merrit knew nothing could help them.

All would have been well had not one of the spiders kicked against the bundle deep in the brush. The silence was shattered then by the roaring sound of Merrit's gun. Once, twice, and twice again it went off and each time he fired there was a roar of pain from one or another of the spiders. But he wasn't as lucky as he had been with Hutu.

Either his aim was bad or the time he had lain there had closed circulation enough to make firing difficult, but whatever the reason, Merrit didn't hit a spot to bring death to them.

Save one shell, Merrit thought as he counted the shots. Two. One for her and one for me. Six, he counted, then turned, and looked down at the girl. She read what was on his mind.

"Love came a little late, didn't it, dearest?" she said.

"I was blind," he said.

"It doesn't matter now," she said, smiled, closed her eyes and said, "All right, sweetheart."

He bent his wrist inward toward her breast, breathed a silent prayer and pulled the trigger. Nothing happened but an empty clicking sound. Merrit had forgotten the two shots he had used in the forest.

"There are no more shells," he said with something akin to panic in his voice.

The girl looked past his shoulder.

"Oh, Mer, honey. They're coming again."

The spiders had retreated from the hail of fire. Now, they came forward again. Straight for the bundle on the ground. The sound of their mandibles working was the most terrible the two humans had ever heard. Closer and closer and at last directly above them. They closed their eyes and waited.

There was an interval of silence, as though the whole forest awaited the end of the tragedy. The end was unexpected.

Instead of the crushing sound of the mandibles closing on their defenseless bodies, Merrit and the girl heard the spanging sound of high-powered rifle fire. And once more there were the loud shrieks of pain from the spiders. The rifle fire was steady and continuous for several seconds. When it was over silence descended on the jungle again.

"Ward! Ward," Merrit shouted. "Here, man. . . ."

Gloria sank into a quivering crying bundle on the ground at her release. Merrit knelt at her side, placed his arms about her and comforted her as best he could. Ward and Harrison stood above them and marveled that they had found them. They had, in fact, started on their way back to the helicopter when they heard the shots. Orienting themselves, they dashed wildly in the direction of the firing. They arrived in the nick of time.

"Do you think. . . . But you both have to manage it somehow," Ward broke in on the tableau. "Another twenty minutes and we won't be able to see our hands in front of our faces. Let's go."

MERRIT and Harrison supported Gloria. Stumbling in a wild run, the four raced for the spot where Ward and Harrison had the helicopter. Through the deserted village, past the mouldering carcass of the spider, into

the jungle again, they ran. But the shadows were falling fast, faster than they could run. The ascending moon was already casting its own shadows. And still they ran on. For in their breasts was a common fear. That they hadn't seen the last of the spiders and that there might be others lurking in the jungle paths.

They were drenched with perspiration, winded and staggering when they reached the open and saw the silver shape of the helicopter ahead of them. Gloria was crying with gladness when she saw it.

"Let's take it easy for a second," Merrit gasped. "I'm just about done in."

It wasn't Merrit's word which gave them pause. It was a droning sound from above. They looked up and saw an immense circular shape above them. Streamers of flame swept from exhausts strung along the hull of the strange ship. It moved silently in the heavens, a saucer-like plane. They watched it swing toward the eastern horizon and disappear from sight.

"What was it?" Gloria asked fearfully.

They did not answer her but looked fearfully at each other. . . .

THE mother ship seemed to bang suspended from the sky. Suddenly a string of cables shot out from it. And in a few seconds a number of creatures began to descend.

They reached the ground, formed into two squads, and with the largest of them at their head, marched off toward the huge circular shape not far off. Reaching it, they clambered aboard and disappeared into an open port on the topside.

Reet and the balance of his crew were lined up at attention. Their antennae stood erect as if in salute. The

squads deployed to form lines opposite those swatting them. The immense spider marched to the center and turned his grotesque body to face Reet and the others.

"Moas is an excellent mechanic," the monster said.

"It is true, Most High," Reet said.

"A better mechanic than you are a commander, Reet," the Most High said. "I have full details of what transpired here. My engineers tell me that this planet has a sufficiency of what we need to carry on our lives here. We left Roas because it was a dying planet. . . ."

Reet's cold, unemotional eyes watched the waving antennae of the Most High without a quiver in their depths.

". . . I did not bring us across the great voids of space to find graves on this planet. Death was more welcome there. I commanded you to use discretion when the ship fell, disabled. Capture, do not kill. Investigate, plot out the land. . . . Instead, you bungled badly. Gaitha, Hutu, and others whom I needed are dead because of that bungling. You knew these strangers had space ships. You knew then they were of a high intelligence. Surely you must have known they possessed means of warfare. But you sent Hutu and the others out, unarmed except with the means nature gave us. So they died. . . ."

"Very well, then. The rest of you will be brought to the mother ship. All but Reet. He will remain here. It will be his duty to place the explosives in the proper places. And set them off. . . ."

THE helicopter rose straight upward into the deep blue night. They were cramped for space inside but they managed by having Gloria sit on Merrit Hyland's lap.

"Back to Villa Hermosa?" Harrison said. He was at the controls.

"Wait," Merrit said.

They looked at him. He went on:

"Their ship, the one which crashed, can't be far off. Let's take a look at it."

"A commendable suggestion," Ward said. "The true scientist. He just escapes from what might have been a fate worse than death and wants to walk back into the jaws of the tiger again to see how long its fangs are. Sorry, my boy. We're going back. After we get back to Mexico City then we'll do something about it."

Merrit started to say something but the girl reached around and placed a finger on his lips.

"Darling," she said. "It's taken me years to make you say the things I've been wanting to hear. I want to keep hearing them. Ooh! What was that . . .?"

The heavens had suddenly lit up with a light that turned night to day. The brilliance lasted for ten seconds. Then dimly to their ears came the sustained roar of a terrific explosion. And just before the light died they all saw it. A streak of something silvery passed

across their line of vision and vanished into the heavens. It was moving with the speed of light. Tiny flashes of orange flame licked from its sides.

"By George!" Merrit said. "They blew up their crashed ship. . . ."

"They must have landed others who were sent for the sole purpose of destroying it."

"And destroying our proof," Merrit said.

"What about the spiders that were killed?" Gloria asked.

"The tropic air, the vermin, insects, and other destroyers will take care of them. There won't be a shred left of them. Not a shred," Ward said. "And speaking of insects. I'd say the mosquitoes had a holiday with you two. Better take some of that toxin."

"The only hug I worry about," Gloria said as she bared her arm, "is the love bug. I'm glad there's no toxin for that."

For once Merrit's kiss held no life. He was thinking, is this the end? Have we seen the last of them . . .?

THE END

## RUBBER SPACE

By CHARLES RECOUR



SOME time ago in these pages of *AMAZING STORIES*, an article by "Queen's Knight" on the nature of four-dimensional space appeared. It was interesting and provocative, and it was one of the many attempts that have been made to explain the nature of the fourth dimension. However, it was concerned primarily with the mathematical fourth dimension, not the temporal one. And there is a distinct difference. "Queen's Knight" did an excellent job of explaining the whole business of the mathematical fourth dimension but of course he made no attempt to really picture it. It is doubtful—no, it is truly impossible—to imagine the fourth dimension—but a good explanation of the methods used to describe it were given.

Zero dimension was shown to be a point. A single line was shown to be a one-dimensional continuum or a one-dimensional "space." Two non-coinciding lines were shown to form a two-

dimensional space, and of course, three non-coinciding lines, all at angles with each other were shown to form our three dimensional continuum. By logical extension, the addition of a fourth non-coinciding line at right angles to the other three, was shown to form our "fourth-dimensional" space. The only question then, is how to actually visualize four lines, all at right angles to each other. Is this possible? No, of course not. Our minds do not permit us to see a physical image of this. But by considering the extension of the other spaces—one, two and three—and by using lavishly various analogies, we can get a pretty good idea of some of the things that must occur in such an hypothetical space. This has been elaborately considered and described many times.

For example, it is pointed out that in a four dimensional space it would be possible to remove things from a refrigerator without opening the door, just as in a three-dimensional space we can

lift a pencil point from paper and set it on the outside of a circle drawn on that paper without crossing a line! Analogy enables us to show this decisively. But it is still no real picture of the nature of the fourth-dimensional continuum—indeed if such a thing exists—which too, is questionable.

The physical fourth dimension which is the mathematical fourth dimension, defies analysis. What however, of the temporal fourth dimension which regards time as its fourth element? Is there more to this? Can we conceive of this with some degree of reality other than that of a mathematical exercise? Yes, we can.

**T**IME, as a fourth dimension, means simply that we have added another number to our framework of reference in order to describe adequately, the physical world. In describing any phenomenon whatsoever it is very clear that three numbers are necessary. These three numbers are the coordinates or distances, rectangularly from a fixed point. At a casual thought, one would think that these numbers would be adequate to describe any event. Thus it may be said, "Joe's barber shop is two miles north of here, one mile west of here and is four floors above here!" For a moment this might seem suitable. But to make that statement completely correct, to describe its (the barber-shop's) existence, to show its extent, we should have added, "... and it is from 1932 to now!" The addition of that time element completes our description of the existence of Joe's barber shop—it gives us three physical rectangular dimensions and one temporal dimension. Consequently all events now must be described in these terms. There is not only distance between

Joe's barber shop and our observer, but there is also time. One is not separable from the other. Time and space fuse into each other and become indistinguishable shadows co-existent, yet one.

This way of looking upon time as a fourth dimension, enabled Einstein to give us an unusual and correct picture of our world. Things totally beyond our comprehension were clarified.

Of course difficulties were introduced by this way of thinking too, especially at the beginning before so many people had thought about the matter. It is easy to say that the distance between two objects is so and so many kilometers, but what is their separation in time? The link between these different and apparently irresolvable entities was most unexpected. It was nothing more than the velocity of light! Why the velocity of light? Well, first of all it is obvious that the link between time and distance must be a velocity. Velocity is distance divided by time. Then to be of any value the velocity must be constant. By experience and experiment—which are in a way the same thing—it was found that regardless of the conditions the velocity of light was everywhere the same. So our relationship between time and distance turns out to be this: three hundred thousand kilometers equal one second! Therefore one may speak of the distance between two objects equally accurately and either in terms of time or in terms of distance. Actually both are measures of the same thing. Thus an airplane is one kilometer away from an airport—or equally truly, it is one-three hundred thousandth of a second away. Time and space have been fused, have been intermingled and inter-molded, one into the other, until their separation is meaningless!

THE END

## ★ PHLOGISTON ★

By ANTHONY D. WROBLE

**T**HE eighteenth century saw the birth and death of one of the most esteemed theories in regard to the transformation of matter.

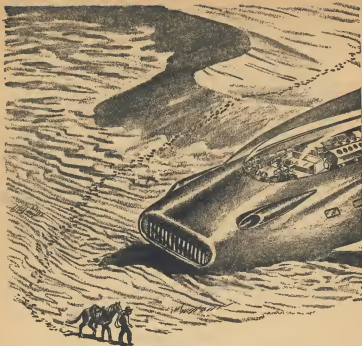
It was known from earliest times that some things had an affinity for fire while others resisted all efforts to burn. Those which did then, it was concluded, must possess some unknown element which gave them this attribute. Early in the century, Becher and Stahl, convinced of this hypothesis, named this unknown element *Phlogiston*. Although misleading, the Phlogistic Theory explained all the facts observable at the time. For instance, things which were supposedly complex such as metals, when burned, gave an oxide and phlogiston. Since the oxide could not burn it could not contain phlogiston and therefore the element must come from some unknown source. But if it were possible to replace it then the reverse

transformation would occur.

One of the prominent investigators to follow the pseudo-theory was the English scientist, Priestly. Conducting his experiment in 1774 on mercuric oxide he discovered oxygen and properly named it "dephlogisticated air." His reasoning, valid to all appearances, was that things burned in a greatly accelerated state in dephlogisticated air because it tended to accumulate more Phlogiston and thus increased the burning rate.

The point it could not explain was the fact that metals gained weight when burned. It was not until the rigid investigation of the Frenchman, Antoine Lavoisier, in Paris, soon after, that an explanation was forwarded for the transformation of matter. This more recent discovery assured for all time the rejection of the Phlogistic hypothesis.

THE END



# "WA-AL, BUST MAH BRITCHES!"

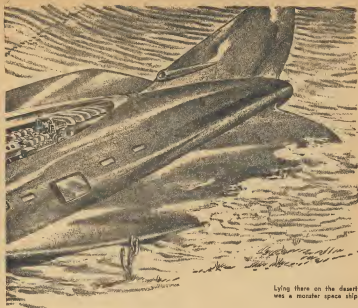
by J. J. PELLETIER

"CAPTAIN Hon! Captain Hon!" Maris Hon stirred sluggishly and felt something tug at his middle. His eyelids seemed glued together and there was an odd stiffness to his face. He felt an irritation rise within him as the voice called his name again. He wished the man would be

still and let him sleep. Suddenly he received several stinging slaps on both cheeks.

"What the blazes. . . ! Lobed!"

And suddenly everything was clear to Maris Hon. That is everything but where he and his crew were. He reached up and unsnapped the belt and almost



Lying there on the desert  
was a monster space ship

**A space ship is hardly the thing you  
expect to find on a prospecting trip into  
the desert . . . a strange kind of "strike"!**

fell from his seat. Hogan Lobed, his second in command was swaying by his side, a sickly grin parting the bearded mouth. Hon looked about and saw that the four others who comprised the crew of the *Star Shell* were stirring from their drugged sleep. He sighed and said:

"Get them out of it and let's get out of here and see where we are."

Lobed staggered, his feet seemed unable to follow the commands of his muscles clearly, toward the others and managed by dint of much slapping and prodding to get them more or less alert. In the meantime Hon moved to the in-

strument panel and bent a searching glance to it. His eyes shone in fierce pride. But only for an instant. For immediately they turned dark in speculation.

Hon had flown blindly with course set to take him out of the universe of Astra 9. The drug he had injected into the veins of the five men who were all that remained of his battalions had a time limit of zero nineteen which meant he was flying backward in both space and time, back until the limit of the drug. He and Gomat had figured it out that last night when his whole world had crashed about his ears and a lifetime had gone by the board under the slashing attacks of Lanis the Tyrant. There was only one thing neither had figured, however, the missing component. And that alone made their flight a thing of chance. For neither knew where the *Star Shell* would end up.

Hon shook his head free of the past and strode with confident stride toward the hatchway. The gauges had told him he was on a planet at least which held an atmosphere comparable with the one they had left so long ago.

He felt rather than heard his men come hard on his heels as he swung the huge gate open. A flood of moonlight silvered the whole interior and a cool breeze fluttered the bronze hair of Maris Hon. He took a half dozen breaths and felt the cleanness and crispness of this strange world's vitality. Taking a last deep breath Hon stepped out onto a sandy floor. The others followed and looked about them with wondering eyes.

The *Star Shell* had landed in a natural depression between two hills which were part of smaller hills or mountains. It lay snugly against the gently rolling sides of the two hills as though it were between an earthen, open-roofed hangar. Slowly the six men marched to the

summit of the nearest hill and looked about them. For as far as the eye could see, nothing but the rolling configuration of the land was to be seen. Then Lohed spotted the pattern of lights in the distance.

"A settlement of sorts," he said.

"Yes," Hon said shortly. "Peaceful or. . ."

THE name of the town was Peaceful Valley. And if ever a place was misnamed, Peaceful Valley was. It was the hell-raisin'est town in the whole of New Mexico. At least that was what Cactus Will called it. And Cactus Will being the oldest settler had a right to its naming.

The Bottom Dollar saloon was filled to overflowing. The bar had so many customers the bartenders were serving drinks only in the general direction of those ordering. If someone got cheated it was because he was simply too slow on the draw. The faro table, chuck game, blackjack and wheels and all the other tables for the parting of the customer and his cash were in full swing. For this was Saturday night and the boys were in town.

The Bottom Dollar was well-named. Most of the men who frequented the joint were left with just that before they had done with it. Not that the Bottom Dollar was the only saloon in town. No, indeed! There were nine others. But it was the largest and most frequented.

To Jack LaDue it made no difference which of the saloons the punchers and gamblers went to. He owned them all. Or almost all. By tomorrow night, he thought, as he sat in his office and figured the take of the night before, he would own that one too. Certainly no blue-nose was going to make Jack LaDue look silly.

The thought of Cactus Will sent a flood of purple to his face. He forgot



the money in front of him as his fists clenched involuntarily. Damn Cactus Will and that Easterner, Hogan. They weren't going to get away with what they were trying. . . .

There was a knock at the door and without turning his head LaDue shouted an entry.

"Wa-al bust mah hritches," a high pitched voice said. "Ef it ain't old moneybag lookin' for a missin' penny."

A tired look came into LaDue's eyes. Thinking of the devil and he had entered. There was no need to turn. He knew without looking it was Cactus Will. He shuddered inwardly as a broad-palmed hand slapped him a terrific whack between the shoulder blades.

He turned and regarded the queerly dressed figure with unalloyed hatred.

"Dammit Willie!" he gritted through set lips. "Do you have to dress up like a character out of a B Western?"

"Yippee!" Cactus Will shouted and reached for the two guns swinging low on his thighs. They came free of the holsters and exploded with tiny popping sounds.

"Oh, put away those cap guns," LaDue grunted sourly, "and stop clowning."

A tearful expression came into the oldster's eyes at the words. He held the two guns before him, then, as though suddenly realizing they were only cap guns, sheathed them into the holsters again.

"Aah!" disgust lifted LaDue's voice a notch, as he looked at the button nose, rose-red from whiskey, at the fringe of grey beard which framed a perfectly moon-round face, at the almost masqueradish get-up of eighteen ninety cowboy regalia. "Well? Have you talked to that Hogan guy yet?"

"Sure, Jack. Sure. But he thinks I'm a re-re-something or other of Wild

Bill Hickok. An' all he wants to talk about is some o' those gun fights I used to have. 'That is Wild Bill used to have. . . ." His voice faded off at the fury he saw come to life in LaDue's eyes.

"And you," LaDue said bitterly, "got so interested in telling him, that you forgot what I told you, right?"

Will shook his head in agreement.

La Due forced his temper to a lower level. There was just so far he could go with this character. "Okay! Go ask Plummer for a half pint. . . ."

"A half pint. . . .?" Will's voice faded off into nothingness.

"That's all. Stall some more and it won't be even that. Remember what happened the last time you didn't have anything to drink? You kind of went off your trolley and shot up the town. So the sheriff said he'd really fix you the next time. That's why you're wearing those cap guns, aren't you?"

THE old-timer wet suddenly dry lips with a tongue that was only a shade more moist than the lips. Whiskey was the predominating factor in his life. He was lost without it. Yes. He'd better do as LaDue asked. Hogan was a nice lad but. . . .

"Okay, Jack," he said. "I'll do it tonight."

Cactus Will walked toward the far end of town where Jim Hogan's saloon stood. A group of riders came streaking out of the darkness. One of them recognized the odd figure and pulling his pistol out shot it skyward, shouting a rihald greeting as he did so. The rest hearing Will's name shouted also shot their guns off.

A broad and happy smile lighted the old man's face and he also pulled the cap guns out and followed the example set by the punchers. He was still smiling as he stepped through the swinging

doors of Hogan's place.

The juke box was playing a jump tune and a half dozen youngsters were having a time dancing to the swing music. The bar was also lined with customers, but they were not the same kind which lined the other bars in town for these were all kids, most of them in their teens and a few slightly older. A tall man in sport shirt and slacks was behind the bar and his lean tanned face was alive with good-humor as he served up soft drinks and ice cream to his customers. He looked up in time to see Will come in and shouted a greeting. But the smile turned to a frown at sight of the other's serious expression. Calling one of those on the other side of the bar to come behind it, Hogan went to meet the old man.

"Hi Cactus," Hogan said. "Uh, huh. You saw LaDue, eh? Well, come in back and let's hear the sad news."

Hogan puckered his lips up and leaned back in the swivel chair, his legs finding a place on the desk top. He had expected something of the news Cactus had given him. His grey eyes, usually warm in humor, were bleak and stony looking. Cactus sat dejectedly to one side, munching on a candy bar.

"LaDue isn't going to rest until he has my place," Hogan said slowly, bitterly. "There isn't any use kidding ourselves about it, Cactus. Trouble is there isn't much we can do about it, is there?"

"'Fraid not," Cactus replied. "'Bout all we c'n scare up is a lotta kids. They don't stand much 'gainst guns. . . ."

"Yeah," said Hogan. "Well, what did LaDue say tonight?"

"Came right to the point. Last chance, he said. An' no more about that Bill Hickok talk."

Hogan looked pityingly at the other. He knew the trump card LaDue held over Cactus, whiskey. He himself

wouldn't give the old man so much as a drop. But so long as LaDue would Cactus was happy. And the old man couldn't do without it. Well, it looked very much like he was going to have to go it alone. He also knew he didn't stand much of a chance. Suddenly their heads lifted. There were odd sounds coming from the interior of the saloon. As one they rose and ran for the door. The two stood on the threshold and gaped at what they saw.

ALL movement had stopped. The youngsters had moved toward the rear and were huddled in a large group by the juke box. Facing them were six men. They were dressed in green knee-length breeches and tightly-fitting tunics and shoes which fit so snug they seemed part of the foot. They were hare-headed. At their head stood a tall man, taller even than Hogan who stood six feet. He had hair the color of bronze. He was fair-skinned and of a tanned complexion and from where Hogan and Cactus stood, he looked to have intelligence written all over him. Hogan walked toward the group, stopping as he reached the tall one.

"Something I can do for you?" Hogan asked.

"I don't know," Maris Hon said. He turned and signalled with his eyes for the other's silence. Already his mind, which knew all the sounds of human beings had translated the sounds into words. He and the rest had that faculty. In them was a complete racial memory. Men like these had existed on Astra 9 a million years before. "I think we are lost. . . ."

"Well," Hogan said eyeing the six up and down, "you're in the town of Peaceful Valley, if that means anything to you?"

There was an interval of silence which lengthened until it became em-

barrassing. The silence was broken by a remark from one of the youngsters who had been eyeing them with the frank appraisal of children:

"Gosh! They must be from the circus. But where's it at?"

Of course, Hogan thought. That was it. They were some act or other. But how had they got here? He hadn't heard the sound of horse or car.

"Er, yes," Maris said smiling suddenly. "The circus. Well, it's a long way off. We took a plane and motor trouble developed. So . . ."

"Obb! Well, mister," Hogan said, "that's tough. Where's the circus at?"

"Quite a long ways off," Maris said easily. "And I'm afraid we'll never make it. I wonder. . . .?"

"Where you can put up, eh?" Hogan said. "Well, don't worry none about it. There's plenty room above the saloon. How about your clothes?"

Maris gestured with his hands to show they were all they had.

Hogan turned to Cactus:

"Tbink you can rustle up enough stuff for these men?" he asked.

"Yep. Only thing is, they'll be a mite dirty. . . ."

"Oh, that will be all right," Hon said hastily. "Just something besides these duds."

". . . . Be back in a while," Cactus said, starting for the door.

"All right kids," Hogan turned to the curious youngsters, who were still standing open-mouthed and admiring. "Get back to that shuffle you were doing."

Once more the juke box began its braying and once more there was the stomp and shuffle of dancing feet. Hogan, grinning broadly at some of the executions and gyrations, turned to the six from the circus to ask them into his quarters upstairs. The grin faded from his lips when he saw their bewildered-

ment. He wondered in a detached way where these men had come from that they had never seen dancing like this before. Certainly all of America knew of it and practised it. . . .

"Uh, mister. . . ." he began.

"Hon. Maris Hon."

". . . . Hon," Hogan finished. "If you'll follow me. . . .?"

THE clothes didn't fit too badly. But they made them look somewhat rakish and rather tough. Hogan decided it was the beads. Only Maris Hon was clean shaven. There was a noticeable tightness in the fit of most of the upper garments. The six had found seats on the two beds which Hogan had in his large rooms. Hogan and Cactus sat on a couple of chairs and waited for the one called, Hon, to tell a little of their adventures.

"So you're in trouble?" Hon asked suddenly.

Hogan's face went blank. But a look of fear greyed Cactus' wrinkled features.

"Perhaps we can help you?" Hon continued, smiling easily in a note of friendship. He liked this man, Hogan. Besides, without asking a single embarrassing question, he had offered the hospitality of his home and his friendship. Hon knew by the aura in the air that this man was in trouble.

"How did you know I was in trouble?" Hogan asked.

"A gift I have," Hon said somewhat ambiguously.

Hogan digested that though it did not sit well. Suddenly he wanted to tell this man: he began slowly:

"Yes I am. Large troubles. Briefly, there is a man in this town who wants me out of the way. There is no other reason for his wanting me out than this tavern I own. You saw what I've done with it. Made it a haven for the young-

sters around here. On Saturday, they come from miles around just to have a soda or sundae, to sing and dance. It's all free; I foot the bills. And the reason I do this is because Jack LaDue, the man I mentioned, wants to make this the hell-hole of the west. Already he owns every other saloon. This one would complete the chain. Sooner or later these kids would drift to his places. I don't want to see that. But my hands are tied. . . ."

"And he has threatened you. Is that it?" Hon pressed.

It was Cactus who answered:

"The dirty dog! He's a rattler without rattles! Shore he's threatened. I'm the one who knows what he'll do. Ef he can't get it legitimately he'll burn this place to the ground. But he's got to put on a show. He says he'll huy it. Ask Hogan what he offered. . . ." He stopped and watched Hon in wonderment. Hon had his eyes closed.

Suddenly he began to talk:

"I see a man. He is not well. His physician has told him to seek a better climate or else he dies. He is alone yet he is not alone for in his breast is a love of children and right. He comes to a place where men, evil men, live. He sees their ways and does not like them. Nor does he like what is happening to the children who must live in this place.

"He does not have much money. But he has enough to buy a place of drink from the widow of the man who owned it. The men of evil do not like it. For within the walls of this place is a something which they seek. . . ."

HON opened his eyes and peered searchingly into those of Hogan. Hogan stared back with the same intent as the other. He wet his lips. There was something very strange about this Hon and his friends. Something out of the world, something supernatural.

How else were the man's psychic powers to be explained? At last Hon shook his head, satisfied with what he read in the other's eyes.

"Where is the headquarters of this LaDue?" he asked.

"I'll show you," Cactus said eagerly. He understood little of what went on. Yet he felt these men were going to help.

Hon arose and signalled his men to do likewise. But Cactus didn't stir. He was looking at them in bewilderment. "Where's yore hardware?" he asked. "Guns!" he said more explosively at the question in Hon's eyes.

"I don't think they'll be necessary," Hon said. "By the way, let me see those you're carrying."

"They're only cap pistols," Hogan said.

Hon fingered them, his hands enclosing both of them. He handed them back and said:

"Very well. Let us go."

Cactus' eyes were wide in excitement as he stepped through the swinging doors of the Bottom Dollar. A laugh tried hard to come out of his throat but stuck somewhere in his belly so that it quivered oddly. The six strangers towered over him as they made a tight-knit group on the threshold. LaDue, as usual, was at the large poker table. He saw the seven and a frown creased his forehead. It cleared as he thought Cactus was only bringing trade, and he went back to watching the game.

"Jack," Cactus' voice brought LaDue's attention away from the game. "These men want to see you."

"Yeah?" LaDue looked the strangers over and decided he didn't like their hard eyes, especially the tallest and youngest of them. "About what?"

"About Hogan," Hon said.

"What about Hogan?" LaDue asked.

"Leave him alone. He is doing

right," Hon said.

"Yeah. Suppose you take yourself and your friends out of here before you get what nossey people get," LaDue said. He had noticed the absence of guns on these men.

"Very well," Hon said amiably and turned to his men. There wasn't a single word spoken. There was no need for it. Mentally they were in complete tune. There had never been need of words. And the situation was no different in this strange world. They followed blindly, as they had followed when Hon had given the command for their exile.

Cactus, who stood to one side, breathless with excitement, jumped for the wall at the first lightning-like movement of the tall stranger. Hon's hands went down and tipped the heavy table as though it were made of fibre. And as one man, the others went to work. In an instant the saloon was a shambles. They were outnumbered thirty to one. But they were not of the Earth nor was their strength the puny strength of men of the Earth. Whatever and whoever they struck fell before them. Wood splintered and men shrieked in pain as blows rained on them. They worked singly so that their opponents could not use the six-shooters at their hips for fear of hitting one another.

The only one who escaped their savage attack was Jack LaDue. He had run for the shelter of his office the instant Hon and the others went into action.

THE fight was over in a few minutes.

Once more at a mental signal Lobed and the others leaped to Hon's side. Then, with their leader to the fore, and with Cactus in the middle out of harm's way, they ran for the door. But there was no pursuit. The tough boys of the Bottom Dollar were in no mood for

any more of what they got.

When they got back to Hogan's, Cactus was so excited his tongue kept tripping up his lips it was trying to get the words out so fast:

"... These guys must be a strong-act in the circus. Man. I never saw anythin' like it, Hogan. Why they tossed those tough hombres around like they was kids. Too bad Jack got out of the way."

"That's what I'm afraid of," Hogan said reflectively. "Oh, not that I'm not glad it happened. But I'm sure he'll not wait any longer."

"What about the law in this city?" Hon asked.

Hogan shook his head. "There is no law but that of the gun," he said. "The Sheriff is under LaDue's power . . ."

"Like Astra 9," Hon said in an aside to Lobed.

The bearded one shook his head in understanding. Although he couldn't understand his leader's reasons for staying in this strange place, he knew that in the end they would be sufficient for the rest.

"Look!" Hogan burst out. "What is this Astra 9? Who are you? Where do you come from?"

"If I told you you wouldn't believe anyway," Hon said in tones which were oddly gentle. He knew that he could convince this man that they were from another planet, another universe. But it would take too long. And this one's troubles had to be solved first. For Hon had made his mind up to return. Something Hogan had said had given Hon the reason. "Just take my word for it," he continued. "I am a stranger to this universe. I can and am going to help you. All right, men," he said to the others. "Get into your uniforms and charge the energy-disks to low. I don't want anyone killed. We'll have to take our chances against their weapons. No

time for going back for shields. I have an idea that this man, LaDue isn't going to stand on his heels waiting for something to happen. He's going to attack first. . . ."

Cactus felt a thrill race down his spine as he watched the six strangers march downstairs. This was going to be something like the old days, the days when Wild Bill and the rest came riding to town. He shuffled as swiftly as his aged legs could carry him after the rest. He reached the outside door just in time for the beginning of the show.

LaDue had called all the rough riders and tough gunmen from the other saloons. They were marching in a solid body for Hogan's. Hogan, who had been the first out, had run back to get the youngsters out of harm. The kids were scattering for their cars and horses. Standing in front of the saloon in a thin line directly across the path of the invading roughs, were Hon and his men. The moonlight sent odd lights glittering from the four-inch disks they held in their right hands. They stood like stone statues, and to Cactus and Hogan, about as immovable.

Suddenly, at a signal from Hon, the others raised the strange weapons to their hips. A thin streak of blue light emanated from an opening in the disk. They swept the disk across their bodies. The light did not extend very far, only a few feet. So neither Hogan or Cactus understood why the group approaching melted away. Men fell writhing and screaming to the ground. The ones in the rear began an aimless firing but the range was too great. All the shots went wild. It lasted only a few seconds and the others, those who were left, broke and ran. Cactus shouted:

"Wa-al bust my hitches!"

IT WAS his war cry, the one he claimed Wild Bill always used. But

it broke in the middle to a strangled sob of sound. He had seen something from the corner of an eye. Three fires had hurt forth a hundred yards up, near the head of a shallow harranca. And from those fires, slivers of flame sped toward the saloon.

"Fire arrows!" Cactus shouted.

"Quickly," Hon shouted. He started at a wild run for the harranca, the rest only a few feet behind. Oddly enough, Cactus was next to follow. In the meantime the rain of fire arrows fell on the shingle frame of the saloon with ever increasing fury. The men from Astra 9 ran silently, but Hogan and Cactus screamed their anger in hoarse shouting. They were only some fifty feet from the barranca when flashes of fire announced that the men up there were armed and not just with pistols. Bullets whistled and whined about them like angry bees.

"Down," Cactus shouted a warning.

The blaze of the fires above illuminated the scene as in a nightmare. Worse, the flaming arrows began to get in their deadly work and flames burst from the tinder-like wood of the saloon. They were caught between two fires.

"The last notch," Hon said cryptically. He was lying in the shallow shelter of a scrub brush. He fiddled with the disk then brought it to the level of his eyes and aimed it toward the rim of the harranca. The rest of his men did likewise. This time the blue light was more intense, was thrown further, and with more deadly, terrible effect. The whole of the rim including the fires simply disappeared.

"Let's go," Hon gave the order in a natural unexcited voice.

There was no one left of the men who had been tending the fires or shooting the arrows. The earth, all that remained of it was scarified, as though a fire of terrible power had ripped

through it. Hogan and Cactus stood aghast at what they saw.

"Wa-al bust mah britches," Cactus said.

But Hogan knew then that these *were* men of another planet. A more terrible world in some ways than this. Yet he also knew that there was justice and order on that world for Hon had acted from a sense of justice and right, even though men had to die from it. He turned, shaking his head in wonderment, and looked toward the blaze of his saloon.

"Look out!" he screamed in warning.

He had been just in time to see the figure of a man rise from the depths of a shallow depression. The fire of the disks must have passed over him. There were a pair of glinting somethings in the man's hands. And the man was Jack LaDue!

But for once the men from space did not move with their accustomed speed. Where and how Cactus found the speed with which he whirled was a mystery. For Cactus was past sixty. But from some reservoir of the years passing he pulled a last burst of wild energy. He whirled like a dancing Indian, and faced the armed man only a few feet away now.

**L**A DUE's guns were coming up—there didn't seem to be a chance in the world for Hogan and the rest. And greased lightning streaked toward a pair of stained and worn holsters. A terrible gargoylish grin split LaDue's lips as he saw Cactus go for the cap pistols. The grin was still on his mouth when they came free of the leather, and it was still there as he tumbled to the ground in the aftermath of their thunder. Only it was a death's grin then.

Cactus looked at the smoke which still curled from the muzzles of the cap guns. With a sudden howl of fear he

dropped them.

"The—the Devil," he muttered. "Injun doin's. . . ."

Only Hogan understood. But not quite. He did know that when Hon took the guns in his hands something was transmitted to them. A shudder of fear passed over his frame. But Hon's words dispelled it:

"Let us go back now."

Only the stone foundation remained of the saloon. The rest was charred embers. The whole town was gathered around it. The light of the moon made the sadness on the children's faces even more poignant.

Suddenly one of them shouted:

"Look!"

It was a large safe, the top of which extruded from the stone. Some of the curious scattered and returned with hammers. In a short while the combination was knocked off of the safe. A concerted howl of surprise rose when they saw what the safe contained. It was full of twenty-dollar gold pieces. There were thousands of them.

". . . He said," Hogan whispered to himself, "that I would find something within the walls. The old-timer who first built the saloon must have hid them there. He died alone without kin. These are mine. Mine and all these kids'. Now we can build. . . ."

Only Cactus saw the men from Astra 9 leave. They left quietly and unobtrusively. Cactus leaped for his mare and trotted after the swiftly moving figures. They walked almost as fast as the mare did.

After an hour they came to the shallow valley where the space ship lay, silencing in the bright moonlight. Cactus followed them all the way to the hatchway. Hon, the last to step in, turned and said:

"Good-bye, Earthman. Tell your friend he taught me something I am

taking back. That it is through the children we will win. I will teach *them* right. . . ."

It left the Earth without a sound. In an unbelievably short time it was lost to sight. Cactus turned and mounted and started off again. Suddenly he

jerked the cap pistols from their holsters and pulled the triggers. Tiny popping sounds answered the tugs of his fingers.

"Wa-al bust mah britches," he said softly. . . ."

THE END

## DIAMOND RAY-DETECTOR

By ROBERT STANTON



ROG PHILLIPS, in his "So Shall Ye Reap," told a story of what might happen in the United States should we ever engage in an atomic war. It was a tale of dreadful horror, in which practically everyone in the country had been exposed to lethal radiations from radio-active materials, both from the bomb and from radio-active dusts, the latter sown with fiendish glee by our enemies. In the story, as you will remember, he often referred to "Geig" storms—storms of radio-active dust—and to Geiger counters. Geiger counters are an important part of our present scientific establishment.

It is impossible to tell whether or not a person has been exposed to injurious radiation of the radio-active type, by feel alone. For example, many people at Hiroshima did not know they had been touched by the output of the bomb until months after it was dropped. Then they broke out in fearful sores and knew that they were practically beyond human aid. It is obvious, therefore, that some means must be at hand to warn us when we are in the presence of danger—radio-activity. In the manufacture of the bomb this was an important problem. There were two ways of doing this. First, a person may wear, strapped to his body, a photographic film sensitive to radio-active emanations. When the film is developed, if exposure has occurred, the film will be fogged. Unfortunately this does not show up until the damage has been done. Never the less, it is a useful device. Secondly, a "Geiger-Müller" counter (or what amounts to the same thing—an ionization chamber) was used. This is a clever little mechanism that consists of a wire in a suitable gas, which, when ionization is caused by radio-activity, gives warning in the form of a visual or audible signal. It works on the principle that radio-active emanations cause ionization of a gas thus making it conducting. The pulse of current that flows through the gas briefly is amplified and, as was said, is made visible or audible.

Recently, a third detector of radio-activity has been discovered. It works exactly like a Geiger counter except that it is smaller and simpler.

A SMALL diamond, yes, a commercial or a jeweler's diamond, is supported between two metal electrodes. A potential of about one thousand volts is applied between these electrodes. Naturally, because the diamond is a good insulator, nothing occurs. The source of voltage may be a small electronic power supply, or a small battery. The minute the diamond is exposed to a radio-active radiation such as alpha-rays, or beta rays, or gamma-rays, or ordinary "soft" x-rays—all of which may be generated by an atomic explosion—the diamond becomes conducting for a brief instant. In this respect it behaves exactly like a Geiger counter. There is a sharp potential drop across the electrodes as this occurs, the diamond conducts current for an instant, and this voltage drop is made visual or audible by being fed through an amplifier to a suitable indicating device which may be a cathode-ray tube, a meter, or a "clicking" relay. When that is made apparent—brother, run—there's radio-activity in the vicinity!

The advantage of this diamond is clear. It permits the manufacture of a very small detector, perhaps even so small as to be worn in, say, a wrist watch or a ring. Previously, bulk has always been an obstacle to the portability of counters of this protective type. Such a detector need not cost too much because commercial diamonds are not nearly as expensive as is generally believed, though probably with the development of this instrument their price will rise.

It is odd in some respects that this property of the diamond had not been discovered before.

However, now that it is known you may be sure that it will be fully exploited.

It is a terrible thought to realize that science must be so concerned with the necessity of devising machines to detect radiations, not for laboratories, but for ordinary people who will, it appears, unless something is done that we don't yet know of, become the victims of the hideous effects of radio-active radiations. Is science leading us to our doom?

THE END



# THINKING MACHINES

By ANDREW WHISHER



THE papers these days are full of phrases like "mechanical brains," "electronic brains," "automatic computers," etc. At a casual glance one would have the impression that all of today's computation was done mechanically. As yet there is no substitute for the human brain and in even the most advanced of these mechanical or electronic brains, it is human thought that makes them operate.

Calculating machines are not new. The first, the most primitive and the one still in use in many parts of the world today, is the abacus. This childishly simple frame of wires and beads aids greatly in calculating, especially in the hands of a skilled operator. Actually, all it is, is a physical representation of the processes of calculating, somewhat on the same level as counting on one's fingers.

Probably the next most familiar calculating machine, is the slide rule, invented by Napier back in the seventeenth century and called "Napier's bones." This handy gadget or machine is nothing more or less than a mechanical arrangement for adding and subtracting logarithms. It is of invaluable aid to calculators everywhere for it enables almost unbelievable short-cuts, even though it has its definite limitations. Yet it is a "brain" in a logical sense of the word. Many refinements have been and are being made on the thing, but in essence it retains the same fundamental nature given it by its most prominent developer, the French Army engineer, Mannheim.

The simpler calculating machines that add, subtract, multiply and divide, raise to powers and extract roots, are really to most Americans, the most familiar of the "mechanical brains." All of these stem basically from an early prototype invented by Leibnitz, the mathematician and philosopher and co-inventor of the calculus. These machines use a series of rotating wheels, gears, or the like, so linked, so connected, that they perform the equivalent of a given mathematical operation. Units, tens and other columns are represented by gears with varying numbers of teeth on them. The familiar process of "carrying" is represented by a gear with one tenth the number of teeth, linked to its neighboring gear, while these machines have been enormously expanded in scope, they remain basically the same. One excellent substitution which makes for increased efficiency is the application of electric power to them.

HOWEVER, it is the electronic computers that are most interesting. These machines, employing thousands, tens of thousands, of vacuum tubes, and their components, are able to solve

problems that would take an impossible time for human mathematicians. It is not that they are able to do something the human brain cannot do; it is simply that they can do whatever is necessary, so much faster than the human mind.

As time goes on and they are improved, these machines will eliminate most all of the labor connected with problem-solving. By "problem-solving" here we mean, the abstract problems connected with astronomical calculations, with atomic physics, relativity, etc.

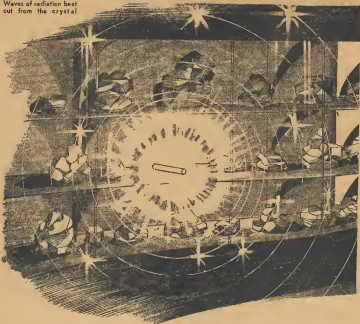
One of the things most sadly lacked by these machines until very recently, was a "memory." There was little understanding of how a datum could be fed to such a machine, yet retained until the proper moment. How is it possible to mechanically store an impulse? This problem seemed to govern the limitations of the computers. But at last, this too has been resolved.

In these electronic brains, data are fed in the form of electrical impulses. These electrical impulses are small transient voltages or currents that are amplified or decreased in magnitude, varied in frequency, rectified or otherwise changed in accordance with the nature of the problem and the actions of the brain. Very often a sequence of pulses must be sent into the machine, but not all pulses are to be used at once. What can be done about this? Nothing—if there is no way to store them. This served to limit the type of problem the machines were capable of handling, until the memory device was added.

A "memory tube" is simply a cylinder of glass containing liquid mercury metal, with suitable contacts at each of it. When an impulse of a certain type is sent into this tube, contrary to expectations, it does not pass through the tube with the usual near-velocity of light, but takes an appreciable time—say, a few milli- or micro-seconds—to go through it. This is a relatively long time in a machine whose reactions are measured in ten-millionths of a second. As a result, the pulses may be stored for desired lengths of time, until the problem calls for them, by varying the length of the mercury tube. With this refinement, it appears that the clever "electronic brain" is practically duplicating the action of the human mind.

This is not true, of course, the brain cannot think creatively. All that it can do is provide an answer for a previously cleverly set-up problem to it. The point is, a human brain had to devise the problem and set up the machine. True, it follows its design and supplies an answer, but the answering ability, was built into it by the human designer. It will be some time before machines become creative—if ever.

Waves of radiation beat  
out from the crystal



# SECRET of the YELLOW CRYSTAL

by Guy Archette

**D**ENNING first entered my life in 1912. He flew into the old Crimson Valley mining camp one afternoon as Art Finch and I were climbing into our plastotherm air-suits for a trip to the smelter. We caught sight of the flutterjet through the cabin

windows even before we heard the faint buzzing sound of its engine. It circled a few times then glided to a landing some two-hundred feet away.

I glanced at Art. He was grinning eagerly. "Visitors!" he said.

"Now isn't that nice?" I rejoined, a



There was something mighty  
peculiar about the yellow bit  
of crystal—and dangerous . . . !

hit more sarcastically, perhaps, than Art deserved. I went quickly to the rack where our rifles hung. I handed Art his and got the mechanism of mine ready for business.

Art watched me, the grin gone from his face. "Tom—you don't think . . .?"

"I don't," I told him. "I'm just playing safe. A lot of people have been coming here, to Mars, lately, and some of them aren't what you could call desirable additions. And we are mining gold in almost pure chunks, you know." Motioning to Art, I went over to one of the windows, where I waited for the occupants of the flitterjet to emerge.

These precautions weren't just a lot of derring-do. Those who have read anything of the early days of settlement on the Moon, either in historical or story form, will recall it as a period of blood-shed and villainy second only to the frontier days of the western United States. The Moon, of course, now tamed by the advance of civilization, and almost fully exploited, serves merely as a jumping-off place for rockets to Mars and Venus. But Mars of the present is as much a frontier as the Moon of the past, and remembering the history of the latter, I didn't intend to take chances with strangers.

Crimson Valley was probably the loneliest and most forsaken spot on Mars. Bleak brown hills enclosed the mine on all sides, as though it were cupped in a great grimy calloused palm. Overhead the purple sky hung low and heavy and cold. The valley floor was covered with the usual rust-tinted sand, and was strewn with rock outcroppings, rounded and worn by the erosion effects—gone now—of wind and water. Here the brooding silence of Mars seemed all the more subtly menacing, as though the encircling hills were jealous guardians over the valley, watching every move, listening to every word.

The location of the mine was thus ideal for a surprise attack by outlaws. The gold we were taking out alone offered sufficient temptation.

As I watched, the cockpit cowl of the flitterjet was shoved back. One after the other, two men crawled out on the stubby wings and jumped to the sand. I relaxed as I saw they were unarmed. They stood there, gazing around the camp. Then they started to walk forward.

I was by no means assured that the two strangers were entirely harmless. I told Art, "I'm going out to see what they want. You stay by the door and keep me covered."

I stood my rifle against the wall, took a deep breath, and left the cabin. The two men waved and quickened their advance when they saw me appear. More out of politeness than anything else, I waved back and walked forward to meet them.

They had the transparent spherical helmets of their air-suits thrown back in the hardy fashion of Mars-conditioned veterans, but judging from the color of their faces, they were recent arrivals from Earth. One was tall and seemed slender, the other short and obviously heavy-built. Something about their faces, when finally they stood before me, carried a haunting sense of the familiar, but memory of where I'd seen them before would not come at once. It was the taller of the two who did the talking.

"This is Mine No. 1 of the Mars branch of Herrick Mines and Metals, isn't it?" he asked.

"That's right," I said.

HE UNFASTENED a pocket of his coverall and fumbled within it. His features were thin and oddly boyish. His eyes were gray, the lashes dark and heavy. His brows almost met across

the bridge of his short, finely chiseled nose. He had full, sensitive lips, and his dark hair was tumbled about his forehead as though from repeated nervous combing with his fingers. He said:

"I have a letter of introduction to Superintendent Thomas Grayson from Neil Herrick."

"I'm Thomas Grayson," I told him.

The tall man looked me over and his lips lifted in a smile which emphasized the curious youthfulness of his face. "You're younger than I thought you'd be. I rather expected a bearded oldster." He had the letter out now and extended it to me. "I'm William Denning. This"—indicating his companion—"is Professor Stephen Partrey."

I shook hands. "Pleased to meet you," I said quite truthfully. I remembered them now, William Denning in particular. He and Partrey had gained a measure of fame by having been on several of the early expeditions to Mars. Denning, however, had furthered himself in public recognition through several books on Martian archaeology and exploration, all immensely popular. I'd read those books as a kid in my late 'teens, and the impression they'd left on me of mystery and vanished grandeur is something which hasn't left me even yet.

Partrey had also written much material on Mars. I'd read little of it, though, since it was the scholarly sort, possessed of academic rather than popular interest. This fact, I think set Denning and Partrey apart even more than their disparity of build. Partrey was a hard-headed realist who dealt solely with facts. Denning, on the other hand, was a dreamer who went beyond facts and into the realm of mysticism. It was this quality, added to a lilting prose style, which made his books so fascinating.

I was not a little confused at being

so abruptly confronted with two celebrities. And overwhelmingly curious, too. Of all places on Mars, what were Denning and Partrey doing here, at the mine?

The letter of introduction from Neil Herrick should explain things, I decided. Conscious of the gaze of the two scientists, I opened it. In essence, the letter acknowledged Denning and Partrey, and explained that as they intended doing research work in the Crimson Valley locality, I was to let them use the camp as a base of operations. I was also to extend such aid and courtesy as would not directly interfere with the operation of the mine. I grinned inwardly at this, since it was so characteristic of Neil Herrick. Even when it came to lending a helping hand in the cause of science, business came first, last, and foremost.

Denning asked, "Will this arrangement be all right with you?"

"Very much so," I answered quickly. "The mine is a lonely place, and visitors are always welcome—especially visitors such as yourself and Professor Partrey."

Partrey waved a gloved hand in a gesture of disclamation. "Nonsense, young man," he said gruffly. "I wager you'll tire of us soon enough." But I could see that he had been pleased, for his small, deep-set blue eyes twinkled. His face was broad with a round nubbins-like nose. He had very thick wiry hair, shot with gray, and a short beard covered his chin and upper lip.

DENNING'S responding grin vanished as though erased by a sudden thought. He jerked a thumb toward the flitterjet. "We've a lot of junk packed in there. If you'll show us where to store it . . ."

"You can leave your equipment in the ship for the present, if you have no

immediate need of it," I suggested. "Later I'll have a couple of the men bring it in." I gestured toward the main cabin, and the two scientists fell into step beside me.

"You seem to be a small outfit," Denning said, glancing around. "Somehow, I always had the idea that a mine was a big, bustling place."

"There's almost a dozen of us here," I said. "It may surprise you to know that this number is considered quite large. Most of the work, you see, is carried out by automatic machinery. Very little if any human muscular effort is involved."

"Machines," Partrey chuckled. "All-ways machines. Even on Mars."

"Help is hard to get," I told him. "Such few laborers who are willing to come to Mars at all demand sky-high hourly rates for their services. That's understandable, though, because work under Martians conditions of atmosphere, temperature, and gravity is very difficult at best. Machines are the only solution." I admitted, "I designed much of the machinery we're using here. It's all highly specialized equipment, and there would be marked differences in efficiency if it were used anywhere else—Earth, say, or the Moon. I was a Mars hug from 'way back, and a college training in engineering gave me a few ideas."

"Which, I think, explains why you're a young fellow where I'd expected a middle-aged man at best," Denning commented with a grin.

Partrey said, "Neil Herrick mentioned that you're taking out gold here."

I nodded. "Mars is rich in gold-bearing ores, as you no doubt know. Somehow the ancient Martians never attached the importance to gold that we have."

"Nor for a great many other things," Denning added softly. "They were a

strange race."

"I know what you mean," I said. "I've visited a few deserted cities. There are several near the mine. Crimson Valley is one of a chain of valleys, and many of them have cities."

Denning glanced at me, his gray eyes turned dark and brooding. Then he smiled faintly. "That's why Professor Partrey and I are here—because of the deserted cities, that is. This part of Mars contains more than any other. The proximity of the mine was a welcome convenience."

"Oh," I said. "You intend to explore the cities nearby?" I tried to give the impression of being only politely interested, but I guess my actual deep-seated curiosity was all too apparent.

Denning nodded slowly, eyes dark again. "Professor Partrey and I intend to learn what happened to the ancient Martians—why and how they vanished so completely as they did. For Professor Partrey it is the last attempt. He isn't young anymore, and Martian conditions are too much of a strain for an extended stay. For myself, however, it is just the beginning. I'm going to learn what happened to the Martian race. I'll never rest until I have the answer."

WE HAD reached the main cabin by this time. I pulled open the outer door to find Art Finch standing within the lock, fingering his rifle as if he didn't know what to do with it. Denning and Partrey glanced at Art, at the rifle, and then at each other.

I thought fast. "Going out for target practice again?" I asked.

Art nodded a bit too quickly. "Yeah. Yeah, that's it. But since we've got visitors, I guess I'll postpone it." He grinned weakly.

I introduced Art to Denning and Partrey and explained, "Art is crazy about target practice. Goes in for it

almost every day." The two scientists seemed to accept this somewhat dubiously, and mentally I cursed Art for having remained at the door long after it was perfectly obvious there wasn't going to be any trouble.

In an effort to cover up the all-too-apparent falsity of the situation, I gestured Denning and Partrey into the cabin and nudged Art ungently after them. Art stumbled and looked back over his shoulder to give me benefit of a scowl that was eloquent of injured feelings. Art was a perfectly good mining engineer, but he never quite understood certain things unless they were carefully explained to him.

I got Denning and Partrey settled, and then, excusing myself, I left the cabin to get things organized. I saw my foremen, Ira Harker at the mine, and Slim Newcomb at the smelter, appraised each of them of the fact that we had visitors, and left them with orders to take a few men and unload the equipment from the flitterjet. Next on my list was Sam Wah, our Chinese cook, who promised to outdo himself for the benefit of our guests.

That night we had what might be called a little party. Sam Wah performed a culinary miracle with his stock of canned, dried, and concentrated foods, and as a sort of topper, I dug a quart bottle of scotch out of hiding.

Harker and Newcomb were somewhat awed by Denning and Partrey and didn't have much to say, but Art and I managed to keep the conversational ball rolling. We discussed news from Earth for a while, and then Denning switched the talk around to something which seemed to be uppermost in his mind—the deserted cities.

"I've been wondering, Grayson, if you've ever noticed any aircraft passing overhead, in the direction of the cities

beyond the valley. There isn't much of a law enforcement organization on Mars yet, and I've been worried about looters. The carrying away of certain things might make difficult if not impossible the work of Professor Partrey and myself."

I shook my head. "I've never noticed any aircraft about, and neither have the others here, or they'd have mentioned it. Anyway, I don't see that there's anything in the deserted cities worth the taking."

Denning smiled faintly. "From our viewpoint, no. But there may be many things in the deserted cities right now which among the ancient Martians were considered of great value."

"In other words," Partrey put in, "it's a case of two cultures being so utterly dissimilar that the people of one fail to appreciate that of the other."

Denning nodded slowly. "A very queer culture, that of the ancient Martians. Perhaps the greatest mystery, aside from their complete disappearance, is how they traveled and communicated. Mars never had any oceans to speak of. Great rivers and lakes, yes, but no oceans in the sense with which we of Earth are familiar. In relation to its size, then, Mars always had more land surface than the Earth. And this was never at any time densely populated, since from the number and size of the cities, the Martian race was not a large one.

"The cities are widely scattered and usually very far apart, mostly in deep valleys and along canal bottoms, sites which retained more air and water than those of higher altitude. Now the strange thing about all this is that there are no roads connecting the cities. There never were any roads. The ancient Martians possessed no surface vehicles, aircraft, or hoats. Yet the cities show an astonishing uniformity

of culture. A city on one side of the planet, for example, is very much like that on the other. Just as artifacts, utensils, and design and detail of buildings and furnishings of one city resemble in every slightest respect those in another city several thousand miles away."

"But the Martians must have communicated *some* way!" I hurst out. "Perhaps by a method similar to our present day television."

DENNING shook his tousled head with emphatic finality. He leaned forward over the table, gray eyes intense. "The ancient Martians did not have television, or anything even remotely resembling it. Their culture seems never to have developed a mechanical side—no instruments, devices, or machines of any kind. In examination of several cities on previous expeditions, Professor Partrey and I found simple tools and utensils—but little else. To be sure, there was a large number of objects of crystal or quartz whose purpose or function we could not guess, but except for differences in form, color, and size, these were just so many chunks of mineral, entirely without meaning.

"The Martians never discovered the uses of the wheel and the lever. They never came anywhere near the telescope or the microscope. There is nothing to show that they made even the most casual gesture toward such sciences as biology, physics, or astronomy. They do not seem to have made the slightest effort toward understanding themselves or the world in which they lived. They left nothing written behind—if they possessed writing at all. No books, paintings, statues — nothing. Their houses are the simplest kind of single-storied, stone-brick structures, little more than glorified huts."

Partrey took up. "But make no mistake, the ancient Martians possessed what can undeniably be called a civilization. You've seen a few of their deserted cities." He nodded at me. "Their homes may have been simple according to our standards, but they are clearly of an advanced stage of development, gathered together into what once were large, park-like communities. The communities had to be supplied with food, and therefore, obviously, there were farms, orchards, and ranches. Also, there must have been some sort of social and political organization. And there must have been commerce of a sort, though it's difficult to understand how this took place. There are no evidences of how the ancient Martians traveled, communicated, and transported materials—in spite of the fact that there are indications that they did."

"If we knew," Denning said, "perhaps we would know also the answer as to how the Martians disappeared."

"Couldn't a war have been responsible?" I asked. "Or a plague?"

Denning shook his head with slow emphasis. "It couldn't have been either. There are no evidences of destruction, no slightest signs of a disaster of any kind. Nor could the natural dying out of a race be used as an explanation. The condition of the cities shows that desertion occurred abruptly and simultaneously."

A silence fell. The room filled with a *queerness* that made it seem strangely hollow and cold. I glanced at Denning. He returned my gaze with a kind of somber contemplation, his youthful features shadowed and tense.

I felt a stirring almost of pity as I looked at Denning. His and Partrey's mission seemed hopeless.

And then, to my intense surprise, Denning said, "Perhaps it isn't entirely



hopeless."

I STARED foolishly. I hadn't uttered a word—yet Denning had seemed to know the thought that passed through my mind.

Partrey chuckled softly. He glanced from Denning to myself with what was apparently a complete understanding of the situation. He said, "Professor Denning is a telepath—that is, he has the rare ability to catch the thoughts of others. But he doesn't like to have it known. Terribly touchy about it, in fact."

Denning gestured with something of irritation. "They made a big fuss over me when I was a kid because of that. I hated it. Made me feel like a freak. When I saw that I wasn't going to be given a chance to lead a normal life, I hid away until everyone forgot about me. I even had to change my name."

"Say—you must be James Barrett!" Harker exclaimed abruptly.

Denning nodded with a slowness that obviously was reluctance. "Yes, that's my real name."

"They called you the Telepathic Prodigy," Harker said. "I remember now." He grinned around the table, and ran a gnarled hand through his stiff tatch of white hair, a mannerism of his in moments of self-consciousness.

Denning smiled ruefully. "Well, the cat's out of the bag. I don't like to have people know about my ability, because people are never quite at ease with a person whom they know is able to read their thoughts. Most people are ashamed of their thoughts, you know. But I've developed what might be called a knack of using my receptivity only when I want to. I might add that I can also transmit thoughts—but don't form the impression that this makes me a mental marvel. It's just that—merely an ability, like being able to per-

form intricate calculations mentally or wriggle your ears. Other than being able to wriggle his ears or perform intricate calculations mentally, the possessor of either of these talents isn't good for much else. Which, I hope, explains why I am merely an archaeologist instead of dictator of Earth."

Partrey chuckled again. "I didn't intend to give away a secret. I just thought that forewarned is forearmed. Professor Denning is often absent-minded in the use of his knack, and this causes embarrassing situations among the uninitiated. We're going to be here for some time, you know."

Denning's ability aroused a heated though good-natured discussion of telepatby in general. Denning tried to prove that the human race was becoming telepathic, whereas Finch and Harker contended that it was merely a gift which cropped out at infrequent intervals. Nothing really was settled, but I noticed that Denning's telepathic powers had been accepted matter-of-factly and without reservation.

Conversation stretched its verbal arms and yawned. By a kind of tacit agreement, we went our separate ways to bed.

In the morning Denning and Partrey left in the flitterjet for a reconnaissance jaunt. It seems that they wished to fix in mind the location of the deserted cities beyond the valley before they started any actual research work. Their stay at the mine was to be an indefinite one, but if it was all right with Neil Herrick, it was all right with me.

Anyway, the week which followed showed clearly that if I'd ever had any fears that Denning's and Partrey's visit would cause complications, they would have been quite groundless. The two were gone the greater part of each day, returning always just a short time before the sun vanished beyond the hori-

zon in the abrupt way it does on Mars. They were usually too weary to make much of an attempt at conversation, and Art and I let it go at that—not without some disappointment, however.

It kept on like that for more than a month. Then came sudden tragedy.

ONE day the flitterjet returned to camp during the afternoon instead of shortly before sunset. I happened to be leaving the mine when it landed. For the craft to return so soon struck me at once as unusual, and instinctively I knew something was wrong.

As I walked toward the flitterjet, Denning climbed out. He didn't jump to the sand. Instead, he reached back into the cockpit and hauled at something within. In another moment I saw what it was—Partrey, his stocky figure very still and limp in its plastotherm air-suit. I ran the rest of the way in great bounds.

Denning had lowered Partrey's form to the sand by the time I reached him. He turned to face me, his boyish features aged with grief.

"What . . . what happened?" I blurted.

Denning's lips moved, but words did not come at once. Then, "Professor Partrey is dead. I'll explain later. Right now help me carry him into the cabin."

The news came as a great shock to me. For a moment all I could do was stare. Denning placed his hands under the armpits of Partrey's body and waited with a stolid patience that spoke of emotions so exhausted by sorrow that my delay was the least of the things that no longer mattered. I woke into dazed motion and grasped the ankles of the dead scientist. Between us, Denning and I carried the body over the sand and into the cabin, where we placed it upon a bed.

Art Finch was in the cabin. He had

obviously noticed our approach, for his widened eyes looked questions at me.

"Partrey's dead," I told Art. "I don't know how it happened—yet." I looked expectantly at Denning. He removed his coverall with fumbling hands and sank into a chair. His gray eyes were bloodshot.

"It was an accident," Denning whispered. "An accident—a combination of events. . . . Lord, I should have guessed it before. It was in front of me all the time. What a blind fool I was!" He passed a hand over his face, then looked at me with sudden clarity. "Those crystal and quartz objects—they mean something. I should have guessed that. The things were all over—in every house we ever examined."

"But what happened to Partrey?" I demanded. "How did he die?"

Denning moistened his lips. "We were in one of the deserted cities beyond the valley. Professor Partrey was examining a crystal object which he'd taken from a house we'd just left. I was looking at it, too. No—not exactly looking at it, for I was using my mind. I don't know how to explain it, but you know of my ability. There are some things I do unconsciously that I don't understand myself. I was looking at the thing, and . . . well, I can modulate the transmission of my thoughts in somewhat the same way you can modulate the tones of your voice. I was doing that, entirely unaware of it, when suddenly the crystal object flamed into Professor Partrey's face. I was knocked off my feet, but not by any physical force. It was a mental thing. A band seemed to grip my mind and wrench at it, and then I was sitting in the sand. Professor Partrey had fallen, too, but he never moved again. He was dead. His face wasn't burned. There wasn't so much as a mark upon him—but he was dead."

Denning sucked air into his lungs as though he had forgotten to breathe. "I don't know what spared me, unless it's some condition of mind of which my telepathic ability is only one direct manifestation. The mind is an unexplored maze at best. It may be that some people possess strange powers lacking in others. Or perhaps we all have these powers, but some in greater degree. I don't know. . . .

"Anyway, that crystal thing—it was pale blue and cylindrical, about six inches long and an inch or so in diameter. Professor Partrey carried it away because we had never found anything of that size and shape before. Most of the objects are quite standardized, you see. Cubes, and pyramids, and spheres, and the like. The entire gamut, in fact, of solid geometrical shapes. They mean something—I know that now. I have a dim glimmering of the truth."

DENNING'S voice was followed by a thick, strained silence. Realization came to me that something would have to be done about the situation. I mulled it over, and shortly I got a plan of procedure rounded out in my mind.

"Partrey's death will raise questions on Earth," I told Denning. "The authorities won't be likely to accept your story at face value. You'll have to have legal evidence from this end fully attesting to the fact that Partrey's death was an accident. This is what we can do: For the present we'll bury Partrey in a shallow grave. It's below freezing here most of the time, and we don't have to worry about decomposition. A company freighter will arrive in another few weeks to pick up our quarterly output. There'll be a doctor along who gives us a regular check-over. He'll perform an autopsy and make out a death certificate. Then I'll write up a coroner's report, and have it properly

approved and witnessed. That way you won't have any trouble when you return to Earth."

Denning nodded dully. "Thanks," he muttered.

"One more thing," I said. "That crystal cylinder. Did you bring it with you?"

"No. I left it where Professor Partrey had dropped it. I . . . I was afraid to touch it."

"I can understand that, but I'd like to have you find the thing. We'll need it at the inquest."

Later Art and I wrapped the body of Partrey in a blanket and carried it outside, where we dug a shallow grave in the sand. I used a rock for a marker, and that for the time being was that.

Denning was silent and morose for the next few days. He remained in the cabin, pacing the floor like a caged beast, or staring into nothingness for hours on end. Apparently, he felt his responsibility in Partrey's death keenly.

Then one morning Denning roused from his brooding and left camp in the flitterjet. He returned some three hours later, joining Art and myself in the main cabin, where we were preparing reports in anticipation of the arrival of the freighter.

Denning placed a crystal cylinder upon my desk. "Here it is," he said.

"The thing that killed Partrey?" I asked.

Denning nodded gravely. I edged away from the object as though it were an atomic bomb ready to explode. Not that it looked dangerous. It was really the most harmless-looking thing you could possibly imagine. Just a transparent cylinder of pale blue crystal. Through it I could see, magnified, the writing on the papers that lay on my desk.

Denning pulled off his coverall and sat down in a nearby chair. He spoke

softly. "I've been doing a lot of thinking about all those crystal and quartz objects which Professor Partrey and I found in the cities. I think I know what they are. If I'm right, it'll explain many baffling aspects of Martian culture."

I glanced at the crystal cylinder. "I don't see how that would explain anything," I told Denning.

"No?" Denning leaned forward, his face suddenly intense. "Suppose the cylinder were a weapon—a weird, incredible weapon, activated by a certain intensity of thought-force. What would that make the other crystal objects? Heating and lighting units, perhaps, communication devices, any number of gadgets of a household or industrial nature." He fell silent. The intensity of his gaze turned inward, became introspective, as though his thoughts were continuing where his words had left off. Abruptly he stood up. "I'd rather not say any more about this—at least until I'm sure. I may be like a man, you know, who though never having seen an ocean, infers from a drop of water that there are such things as oceans. Whether or not the deduction does him any good depends on his finding an ocean to prove it." Denning smiled in a tired sort of way and left the room.

I GLANCED at Art. He returned my gaze with a look of mild bewilderment. Apparently he didn't know quite what to make of Denning's little flight of fancy, and as far as that goes, I wasn't so certain myself.

More to keep Art quiet than anything else, I got back to work on the reports. I didn't want him asking questions which I wasn't prepared to answer.

Denning resumed his now solitary trips in the flitterjet. As before, he returned always just a short time before

nightfall. His activities — whatever they were—kept him broodingly pre-occupied.

The company freighter arrived at the scheduled time. I saw the bullion stowed aboard and got a signed receipt from Captain Nate Barrows. Then I submitted with the others at the mine to a physical check-up by Doc Saunderson. These routine procedures over, I brought up the matter of Partrey's death.

Saunderson conducted an autopsy on Partrey's exhumed remains, and later we held a kind of rough and ready inquest. Denning repeated word for word the story which he had previously told Art and myself. The cylinder of pale blue crystal was exhibited. A suggestion by one of the jurymen that Denning prove the cylinder actually possessed the properties ascribed to it was vetoed as being too much of a risk. Saunderson then gave a report of the autopsy which, stripped of its medical terminology, explained Partrey's death as due to a complete disruption of the cells of the brain. Under questioning, Saunderson firmly excluded any possibility of foul play. After a short debate, the jury turned in a verdict of accidental death.

I wrote out a coroner's report which Captain Barrows volunteered to see reached the proper authorities on Earth. Partrey was buried again, this time in a secluded part of the valley and with all due ceremonies. Shortly after, the freighter left. It was our only contact with the outside world, and we saw it off with various degrees of wistfulness.

Life at the mine settled back down to normal. The necessity had arisen for a new shaft to be sunk, and for over a month Art and I were busy with this. Denning, as far as contact with him went, was a wraith who came and left

in the flitterjet.

Then one morning Denning paused as he was about to leave on one of his daily trips. He eyed me in a speculative sort of way and seemed to reach a decision. He asked, "How would you like to go with me today? I've made some interesting discoveries, and I thought you might like to see them."

"I certainly would," I told him. I climbed into my air-suit before he had time to change his mind. Leaving Art in charge of things for that day, I followed Denning out of the cabin and into the flitterjet.

Denning took the craft up, circling a few times for altitude, then setting out for the valley rim toward the north. Shortly the valley was behind us, and we buzzed over a great plateau. Denning was silent, lost in some mysterious thoughts of his own. I was curious as to our destination, but I did not disturb him.

I WATCHED Denning covertly. This was the first opportunity I'd ever had really to study him, and now the realization came to me disturbingly that he had—changed. It was a subtle sort of change—something sensed rather than seen. His skin had grown brown and leathery from almost constant exposure to sun and wind, and his eyes seemed to have narrowed in a constant searching squint. He looked thinner, too, than when he had first arrived at the mine, and something of the youthfulness of his face had gone.

But it wasn't any of these minor physical transformations that carried any suggestion of strangeness, of *change*. Rather it was something that had taken place in his mind and manifested itself in the glance of his eye, the set of his jaw, the tilt of his head. It was an atmosphere about him, as though he had absorbed so much of

the alienness of Mars that it was beginning to ooze from his very pores.

We approached a network of hill ranges. These formed a number of valleys, and it was toward one, which from the shadows filling it seemed larger and deeper than the rest, that Denning directed the flitterjet. Presently I could see within the valley a group of regular outlines, lighter in color than the surroundings—obviously, I decided, the buildings of an ancient city. The city was our destination, for Denning slanted down toward it and within another few minutes we glided to a landing on the outskirts.

Denning said, "We'll walk the rest of the way. It isn't far."

I nodded and fell into step beside him. Soon we reached a group of single-storied stone houses at the edge of the city, and Denning as though he had done so many times before, strode purposefully toward one of these. We entered a large high-ceilinged room. The room was lighted by a number of broad windows of rose-tinted quartz brick, but my eyes were still accustomed to the glare of sunlight, and at first I could make out no details. Then as my eyes became adjusted to the rosy dimness, I saw that the room was filled with geometric-shaped objects of crystal and quartz in what seemed every conceivable size, shape, and color. The only clear space was that around a table and bench of stone.

Denning gestured around the room, his lips lifted in a smile of dry humor. "My workshop," he said. "This is where I've been keeping myself the past month. Humble, no doubt, but I assure you I have here almost every convenience one could desire. Watch."

Denning looked at the windows, first one, then another. There was the faintest crystalline ripple of sound from each—and then the tints deepened from

rose to crimson, to deep purple, and finally became opaque. The room was dark, except for such light as came through the half-closed door. I grew acutely aware of Denning's shadowy figure beside me, and the alienness of him, of which I'd earlier become aware, was almost an aura of menace.

Denning released a whispering sound that might have been a chuckle. "Watch," he said again.

Abruptly, the room was filled with light. Not from the windows, however. My eyes lifted to the ceiling. Hanging there, pendant fashion, was a large globe which pulsed and blazed with a clear soft radiance.

Denning smiled in amusement at the amazed grimace which twisted my face. He stooped and from the floor lifted a large quartz oblong which he placed upon the table. He looked at it. I could see in its appearance no perceptible change, but shortly wave after wave of increasing warmth washed against my face.

"Light," Denning whispered. "Heat. They had these things—and more. I haven't as yet learned to activate all the crystal objects, but they must have had everything we have now—and in forms vastly more practical and efficient."

DENNING showed me other things.

There was a foot-square cube of milky white crystal which, when he looked at it, showed scenes from all over the planet. I saw Crimson Valley, and Landing City, and several towns whose names I did not know. It was like television of a sort, though we could look anywhere at will and at any distance or angle. There was a squat cylinder, constructed in segments, each of a different color. Denning looked at it, and a strange rhythmic melody tinkled softly through the room.

"They had books, too," Denning

said. "Not in the form with which we are familiar, but books, true enough." From the table he took one of a number of small crystal pyramids. "You have little receptivity, but I'll try to transmit the contents of this to you. Blank your mind as much as you can."

He looked at the pyramid while I concentrated on blankness—and thoughts paraded softly through my mind. They were alien and unintelligible, yet clearly of a didactic and discursive nature, reminding me of lectures back in college days. There were not only prose thoughts, but occasionally diagrams and illustrations, too, which meant equally nothing to me.

"This is a technical work of some kind," Denning stated. "I know little more than you do of what it is all about. I've found a few of what obviously are primers, with thought-pictures and explanations in the ancient Martian thought-forms. I'm learning to understand them, and before long I hope to be able to read the other books." His voice quickened with eagerness. "And I hope that somewhere among them I'll learn what happened to the ancient race that constructed these things—why and how they vanished from Mars."

My mind was spinning under the impact of the wonders which I'd witnessed. I gestured around the room. "But how did they—the ancient Martians—accomplish all this? Thoughts, light, heat, and music—in crystal and quartz. . . . It . . . it's like magic!"

Denning shook his head slowly. "No magic about it. Just science—the science of another race. Somehow they rearranged the molecular structure of these crystal and quartz objects so that they could tap extra-dimensional or sub-spacial energies, manifesting them as heat and light. And somehow the objects were treated so that your own thoughts would be reflected back to you

in somewhat the same way a mirror reflects your image, but changed instead into informative patterns."

"And," I added, "you're one of a very few—if there are any others—who possess the ability to use the objects as the ancient Martians used them."

Denning shrugged slightly. "I'll admit that a superior type of mental equipment is indeed, but don't form the impression that it's equivalent to the keys of the city. I had to *learn* to get the proper results from these crystal and quartz devices. There are ways to use the mind that I never dreamed before existed. And so far I've only scratched the surface of all the tricks the ancient Martians knew."

Denning restored the windows to their former state of rose-tinted transparency and extinguished the blazing globe in the ceiling. He looked thoughtful. "I made a mistake in assuming that ancient Martian culture lacked a mechanical side. But that was because I thought more or less unconsciously in terms of our own culture, and so thinking, I could not find anything which even vaguely suggested a mechanical side. That, of course, was before I accidentally stumbled upon the nature of the crystal and quartz devices through Professor Partrey's death. The ancient Martians did have a science and technology—but a science and technology of the mind rather than the machine. Whether this high state was reached through the usual process of cultural advance or because of a superior type of mental equipment from the outset, I do not know."

Denning stood for a long moment in bemused silence. Then, rousing, he motioned to me, and I followed as he strode from the building.

We spent the rest of the day wandering about the city. When the sun began

to dip toward the horizon, we returned to the flitterjet and flew back to the mine.

DENNING did not remain at the mine much longer. One day he announced his intention of making camp inside the ancient stone building which I had visited. He was first to stock up on supplies in Landing City and then fly to his new quarters. He promised to visit me occasionally at the mine.

Art and I saw him off in the flitterjet. I was not at all reluctant to have him go, for after that demonstration with the crystal and quartz gadgets which he had given me, I'd found him a disturbing person to be near.

The new shaft which we had sunk at the mine proved only to be a waste of time, as some months later the vein which we were working abruptly petered out. Mine No. 1 had become a memory. I radioed the branch office in Landing City and was told to sit tight. Shortly a company freighter arrived, and our equipment was loaded aboard.

Art Finch and the others were transferred to another mine. As for myself, I was sent in a stroke of the most astonishing good fortune to the branch office in Landing City. I joined the staff there as a consultant engineer. My new post had one bright spot, and that was Jean Nettleton. In addition to being quite pretty, she was one of the few young women I'd yet seen who had courage enough to take a job on Mars.

I saw or heard nothing further of William Denning for over two years. During that time I had another of my strokes of good fortune, for Jean Nettleton consented to become my wife. We bought a prefabricated home in Desert View, a booming residential suburb on the outskirts of Landing City.

It was in the spring of 2015 that I

saw William Denning again. A company prospector happened to mention to me that he had found a "queer specimen" living a hermit existence in a deserted city near the Red Hill range. I realized at once that it must be Denning. On one of my days off a week later, I had the prospector, John Whitlock, take me to the city in his flitterjet.

"Better be careful," Whitlock advised, as we landed. "He might be dangerous."

"I know him," I said. "I don't think there'll be any trouble."

We were on the fringe of the city. Some thirty yards away rested another flitterjet, which I recognized as Denning's. It was because of Denning's craft that Whitlock had located him the first time.

I gazed at the nearest stone buildings, and as I did so the door of one slowly opened. The figure of a man in a worn and shapeless coverall moved into sight in the entrance. His hair and beard were long and tangled, and in the mahogany upper portion of his face, his eyes burned bright and wild. It was Denning. In his right hand he held a cylinder of pale blue crystal, pointed at us in the same way a gun is pointed.

Whitlock gripped my arm. His voice reached me softly, tight with urgency. "Don't take any chances with him!"

"William Denning!" I called. "Remember me? It's Tom Grayson."

The strange unkept figure in the doorway peered at me for a long moment. Then the cylinder in his hand slowly lowered.

I heard no sound. Denning's lips did not move. It was only after some seconds that I realized he had spoken to me telepathically.

"Oh . . . Grayson. Welcome, then, and your companion also."

I gestured to Whitlock. "It's all right. Come on."

DENNING stood aside with grave courtesy to allow us entrance into the building. The room into which I walked was quite clean and neat. Denning had built crude shelves of stone slabs around the walls, and on these rested hundreds of crystal pyramids, the books of the ancient Martians. In other places about the room were assorted crystal and quartz devices in all their multitude of colors and geometric shapes.

Denning had closed the door, and now he stood regarding me solemnly.

"I learned you were living here, and I thought I'd pay you a visit," I told him somewhat uneasily. "I've always been interested in your work, and I wondered how you were progressing."

Denning smiled with a ghost of his former boyishness. He spoke, using his voice as though to show his inner complete friendliness. "I knew that when Professor Partrey and I first arrived at the Crimson Valley mine. You already knew of us through the books we had written on Martian archeology, showing you had a genuine interest in the subject. There is much I have confided to you in the past which, if it were not for this, I would not otherwise have revealed."

Whitlock and I were waved to one of two stone benches on either side of a stone table. Denning seated himself on the other, moving, I noticed, with a curious stately grace. He looked at me with his strange wild-bright eyes, and now I saw that what might have been mistaken for insanity or mental unbalance was actually an *other* quality in no way associated with these. Something looked out of his eyes which had been spawned on Mars and had died on Mars and which he had resurrected.

Denning seemed to be waiting for me to say something further. He didn't appear to be eager for news of the out-



side world, or even slightly curious about Whitlock and myself. He gave merely the impression of tolerant friendliness, as though he were ready and willing to answer any questions I might ask, but would hazard none of his own.

"Have you learned what happened to the ancient Martians?" I inquired. "The answer has never ceased to interest me since you first brought it up."

Denning shook his matted head slowly. The unnatural brightness of his eyes seemed to cloud. "No, I have not yet learned the answer. I am not yet able to understand the advanced arracron of the type which would explain what happened to the Thulanni. You see, I am still in the equivalent of high school." He gazed at me a moment, then said, "The Thulanni, of course, are the ancient Martians, and the arracron are the crystal books they left behind."

"But haven't you found any hints of what might have become of the Martians?" I prompted.

"None. Mention is made in several of the arracron of the thinning air and the increasing cold, but with their vast science the Thulanni could easily have sheltered themselves against these. For some reason, it seems, they did not wish to. This apparently precludes any chance of an interplanetary migration—if the Thulanni had ships with which to cross space, which they didn't."

"But the Martians—the Thulanni, that is—did travel? While at the mine, you mentioned that they did, even though they didn't have roads or vehicles."

"Yes," Denning said. "The Thulanni were able to travel about the planet. And they did it in a manner which did not require roads or vehicles. I am not certain as to how, but they simply went in *here* and came out *there*—thousands

of miles away." Denning illustrated his meaning with a wave first of his left, then of his right hand. "They did it most likely with a special thellecron—some one of the crystal and quartz devices in general. The thellecron served as tools and instruments, and as aids in other ways which I am only beginning to understand."

DENNING was silent a moment. His gray eyes gazed into shadowed distances, then slowly returned to an awareness of Whitlock and myself. "Of other things, I know more. The Thulanni were an old race, and very wise. They had evolved to the point where their culture became predominantly a mental one. They came to use their minds as we use our eyes, ears, feet, and hands. This explains the nature of the various thellecron. In a culture largely mental, this was the only useful form machines could take.

"The Thulanni had literature, art, and music, though these had advanced so far as to be in few ways similar to our own. And it will be thousands of years before we begin even to approach an understanding of all the Thulanni knew about such sciences as physics, astronomy, and biology. It will be still longer before we make the first tentative gestures toward fields of knowledge of which we are still ignorant—fields of knowledge which the Thulanni had already investigated thoroughly. Such things as levels of mind, extra-dimensional and sub-spacial energies, time, and hyperspace."

Denning sighed. "I don't expect to learn—much less understand—a tenth of all the things the Thulanni knew. If I learn why and how they vanished, that alone will be enough."

Conversation became desultory. Several times while Denning had been speaking I'd caught unguarded frag-

ments of thought which showed he was having a difficult time in translating and simplifying his explanations so that Whitlock and I would understand them. Much of what he'd said had of necessity been stated in the crudest terms and often erroneously, as our language did not contain the precise terms, nor could our minds comprehend the exact ideas. He'd explained just about all that Whitlock and I could assimilate intelligently, and now we were on our own.

I spoke for a while of events that had transpired since I'd last seen Denning. I knew he was but only slightly interested, but I felt I had to say something. Finally my reservoir of news was dry.

I stood up. "Well, guess I'll be leaving. My wife expects me back for dinner, and it's getting late."

Denning did not speak orally. His thoughts touched my mind gently, warm with friendliness. "I understand. And I am glad you came. I shall look forward to the time when we meet again and I can at last give you the answer."

"I'll be waiting," I said. Whitlock and I shook Denning's hand, and then we went out of the building, to our flitterjet.

**I**T WAS in 2019 that there began to circulate the first myths about a character whom garrulous frontiersmen called "Old Will-o-the-wisp." From the descriptions given of Old Will-o-the-wisp, I knew beyond all doubt it was Denning. The myths were regarded in the beginning as merely the strange tales men tell of the desert wilderness of Mars, quite often true, but later they strained the credulity to such an extent that they were finally accepted as little more than fantasies. I knew that the stories, stripped of their exaggerations and distortions, were basically true, but I was wise enough to keep silent.

One of the myths told of how Old Will-o-the-wisp made his monthly supply trips to Three Mines, a small town which had arisen to meet the needs of the workers of three large nearby mines. He would appear on the outskirts of Three Mines, walk to the general store, but what he needed, and walk back out of town, vanishing as mysteriously as he had appeared. It was firmly insisted that Old Will-o-the-wisp always came and went into thin air itself which on Mars is pretty thin air indeed. All accounts were emphatic on the point that he possessed no flitterjet or other vehicle of any kind. Mention was frequently made of a green crystal octagon, the size of a man's fist, which Old Will-o-the-wisp constantly carried about with him, but to the narrators this obviously had no significance aside from being ample proof that Old Will-o-the-wisp was as crazy as a sand lizard.

Another story was told of the experience of a mail rocket pilot. He had seen Old Will-o-the-Wisp at Stellburg, a small frontier town which was one of his stops on his daily schedule. Arriving at Wilsonville, the next, and some eight-hundred miles away, he had seen Old Will-o-the-Wisp again. There could have been no mistake in identity, for the appearance of Old Will-o-the-Wisp was distinctive enough not to become confused with that of another person. How Old Will-o-the-Wisp had made the trip between Stellburg and Wilsonville ahead of the mail rocket caused wide speculation, since there is nothing faster than an atmospheric mail rocket, unless an interplanetary passenger liner be considered.

The foregoing were just a few of the stories I heard, and of them all, the most fundamentally truthful. For I remembered what Denning had told me of the Thulanni method of travel—

going in *here*, and coming out *there*. It would seem that he had learned how the Thulanni had accomplished it, and that he had found the method convenient enough to use himself.

By 2021, the stories became so buried under layer after layer of fabrication and embroidery that they came to be regarded as myths pure and simple. Old Will-o-the-Wisp was dismissed as the "Paul Bunyan of Martian mining camps," and as he had disappeared from sight around the middle of 2020, grave doubts became current that he had ever existed at all.

It was in the winter of 2022 that I saw Denning again. This time he got into touch with me. He did it in a way of which only he was capable—by telepathy.

It was night, and I was seated in the living room of my home, reading a newstape. Jean was upstairs, putting our small son, Jimmy, to bed. A soft chuckle sounded—or seemed to sound. Then a voice that was not a voice said softly, "Grayson."

I dropped the newstape from suddenly numbed hands and sat bolt upright in my chair. The soft, soundless chuckle came again.

"Do not be alarmed. This is Denning."

"Where are you?" I whispered into the empty room.

"On the avenue before your home. Will you join me?"

"Yes. In a moment."

I called up to Jean that I was going to take a short walk. Then I hurried into my plastotherm air-suit and left the house. The night was hideously cold, and the thin frost which covered the ground glittered faintly in the clear hard light of the stars.

an arm when he saw me appear. Held beneath the other arm, I noticed, was a crystal octagon—a crystal octagon like that mentioned in the myths, but much larger and a glowing pale yellow.

"Greetings." The thought was a firm warm hand in mine.

"And to you," I responded. I looked at him, and somehow I couldn't feel much surprise at what I saw. He had changed again. The long tangled beard was gone. In the rays of the light standard his cheeks and chin gleamed brown and smooth. He seemed to have filled out, for his face was round and full. Again I became aware of the curious youthfulness of him, only now it seemed more pronounced. His eyes were still bright and strange, but the wild glitter had gone, and looking into them, I had the sensation of looking beyond, and beyond, as though to the ultimate end of all wisdom and all living.

Denning's mental finger had been on the pulse of my thinking. "Yes—I have changed again. It is a physical change this time, and far-reaching. From the arracron I have learned to alter my body in such fashion as to subsist upon nourishing energies called the kaethonn, which are sub-atomic. But I have learned as well to make other changes in my body, as you can see. The Thulanni were very old and very wise, and they knew these things."

Again I had the impression, as I'd had that day when John Whitlock and I visited Denning in the deserted city near the Red Hill range, that his explanation was groping and inadequate. I could almost *see* his mind sifting and probing among the alien thought-forms of the Thulanni for expressions which he could translate and I could understand.

Denning went on, "The method of making these physical and physiolog-

DENNING was waiting for me beneath a light standard. He waved

ical changes was the greatest discovery the Thulanni ever made, for it thereby qualified them for the Trip. As it qualifies me."

"The Trip?" I said. "Then . . . then that is—the answer?"

"Yes, that is the answer. The Thulanni made the Trip. They went to another place—but whether to another dimension, another space, or another time, I do not know. They seemed to know this other place so well that explanations in the arracron were unnecessary. I do know this, however; the Thulanni left Mars because of the thinning air and the increasing cold. They could have made circumventing alterations in their bodies or their environment, but they did not wish to. For some reason they considered themselves as having evolved mentally, physically, and culturally to the point where such alterations would lead only to degeneration and racial extinction. They wanted the race to go on, new and strong and ever growing, and the Trip was to them the best way.

"I do not know my destination. I do not know if this for me will be the beginning of the end or merely the end of the beginning. For it has been many millions of years since the Thulanni made the Trip. During that time they may very well have made a second Trip—and a third. But," and he extended the pale yellow crystal octagon, "this is both my ticket and my means of conveyance. I am ready."

"To make the Trip?"

"Yes. I have kept my promise to you. I have given you the answer—such as it is. Our paths part here, perhaps never again to meet."

"Good luck, then."

"And to you."

We gripped hands and minds in a last farewell. And then Denning lifted the crystal octagon and gazed fixedly

into its depths. It flamed suddenly in his hands. There was a faint soft tinkling as of distant silver bells. And watching, I saw Denning vanish abruptly from sight, as though the very air itself had swallowed him.

I WAS alone there beneath the light standard. Very much alone. It wasn't because of the cold that I hurried so quickly back to the house.

In the days and weeks that followed, I thought often of William Denning and his strange quest. Where had it taken him? What had he found after making the Trip?

I thought of these things, and I thought of the Thulanni, that vanished ancient people who had lived with their minds and used weird crystal machines. The Thulanni who had known all the secrets of time, space, and matter, who had advanced so far that they could change the shape and function of their bodies at will. The Thulanni who traveled by going in *here* and coming out *there*—thousands, and very likely even millions—of miles away. The Thulanni who had evolved so far that only by making the Trip could they avert degeneration and eventual extinction.

I thought of all this, and I constructed theories which I hoped would explain what had happened to Denning. He would, I conjectured, find himself on another world in some unthinkably remote part of space. There the Thulanni would be living, changed in shape and function to meet the needs of that world. Perhaps, if primitive natives already existed there, the Thulanni would imitate their forms. And to me it seemed certain that the Thulanni would not be following the old paths, but would be starting out afresh, climbing the ladder of a new and different civilization.

I constructed theories—and the real answer lay before me all the time, though I never once dreamed it was there. Who could have guessed what shape the answer would take? Yet it was there, requiring only the ordinary, every-day act of reading a newstape to make me see it finally in all its overwhelming implications.

In the newstape was a bit of filler that told of a madman who had been found wandering the streets of New York, on Earth. A babbling idiot who died a short time later in the psychopathic ward of a public hospital as the

result of what the doctors called "a condition brought on by some tremendous psychic shock." The mystery surrounding him was never solved. Not even so much as his name was ever learned. Only one thing offered a clue to his identity and the circumstances underlying his death, but to the authorities it was as much an enigma as everything else. It was an object of yellow crystal, shaped like an octagon, which, at the time he had been taken into custody, the madman had been clutching in his hands.

THE END

## BELLS OF THE SEA

FROM earliest times man has sought the treasures buried in the deep. From the diving for single pearls to the search of vast caches of gold man has endeavored to increase his fortune. However, it did not take long to discover that the sea does not give up such hoards without a fight. He learned that he could only go to a certain depth without the aid of any equipment and his endurance at this depth was not enough time to reach his goal.

Consequently he set his mind to devising a method of remaining under water for a more considerable length of time. The first references to such devices were made by Aristotle who reported Alexander the Great using a diving bell in 333 B.C.

Credit for the use of a diving bell, as we know it today belongs to Lortie, who was able to sustain the pressure of the deep for approximately an hour in the early sixteenth century. Further improvements and advice were offered by Denis Papin later in the century but it was never known whether he ever attempted construction of a bell.

The most significant advances toward the development of deep sea diving equipment was made by Edward Halley, the noted astronomer. His machine was a huge wooden barrel to which fresh air was supplied from 36 gallon lead lined barrels at regular intervals. The operation was somewhat like the lowering of a water bucket into a well.

Not until a century later did any further major advances in design take place. In 1778 John Smeaton designed a bell which is still copied in essence today. In his bell the air was pumped from the surface continually allowing the workmen in the compartment to stay under water almost indefinitely. These bells were later used in England on harbor and lighthouse construction. Except for refinement in design, size, and method of construction the diving bell remains essentially as the Smeaton bell, which bears his name today.

## THE ETERNAL VAGABOND

OF THE many races inhabiting the earth none is more mysterious than the Gypsy. Constantly in contact with the world, yet set aside from it, his past habits and language have often caused speculation among those studying him but yet nothing rigidly conclusive of his origin has been established.

For no explicit reason, excepting instinct, do the Gypsies band together and roam the continents.

At one time, the Gypsy was believed to have originated in Egypt. This, no doubt, was due to the relation people improvised between the two words. Resourceful as the Gypsy is, he thought it to his advantage to lend credence to the assumption and great bands of them roamed the countryside of Hungary, France and Germany under the guise of Egyptian ancestry and often under the title of "Dukes of Egypt." These princes sometimes led their hands in secret raids on the populace and outwardly gained the aid of the surrounding peoples.

Being of meager means their plight was often lessened by the mercy of the country wherein they visited, but soon after their fraud was discovered and their raiding habits known they were banished from country after country.

The Gypsy possesses no language of his own nor does he have any literature. His tongue is a mixture of words acquired from the countries he has visited. In music alone does he possess any individuality, for his melancholy, soul-stirring melodies are known the world over. In religion they have the same disposition for they now adopt the religion of the country they find themselves in.

There are few trades which a Gypsy will follow. Most commonly he is employed as a musician, although he sometimes plies the trade of horse trading or metal working. Most significantly he is remembered for his gay costuming and breezy air while the art of fortune telling has become a synonym for the Gypsy.



# Drink Like a Fish

by Berkeley Livingston

**Do fish really drink? Now there's a question for the books. Let's find out, theoretically, what might happen!**

**J**OE "HEISTY" MOORE, the slickest thief in all Chicago, made a pretense of leafing through the *Post*. It didn't seem possible that his eyes could be deep in the slick pages yet watching with avid interest the tall bespectacled man standing by the row of metal package boxes inside the El station.

Heisty was the *slickest* thief in Chicago. But he was also the meanest, the most cowardly, and the most wanted by the police. Yet he had never been apprehended. Joe had the darndest



There was a splash in his glass, and his eyes bulged

faculty for knowing the exact instant when danger threatened.

"... Library's right around the corner. . . ." a voice said.

Heisty flickered his eyelids upward and saw the young news vendor, a lopsided grin on his face, regarding him with unamused eyes.

Heisty slapped the magazine to the stand and growled:

"Aaw! Button your lip, punk! Can't a guy look. . . . ?"

"Not for ten minutes, he can't," the other said hotly. "G'wan! Blow!"

"Say. . . ." Heisty said threateningly. Then his eye took in the square shoulders of the other, the meaty hands, the offside nose and swallowed his words. This baby could be trouble. And trouble was the one thing Heisty *didn't* want at that moment. He turned instead and walked over to the wall and pretended a study of the El System's map. . . .

Heisty had discovered a beautiful racket and was milking it for all it was worth. It was easier than rolling drunks, safer than knocking on someones' till, surer than lifting a purse. These lockers sometimes held a fortune; once he almost hit the jackpot thieves dream about, a bag full of bonds. The only thing wrong was that they were non-negotiable. And all it took was an air of ease and a little gimmick that looked like a flanged needle. The gimmick opened the lockers as if it were the key.

He had become quite adept at spotting persons who were putting something of value in the lockers. There was a strange air of badly repressed excitement about them. . . . Like the tall man with the cheaters.

Heisty had seen him come up the inside stairs, the small case he was carrying snug under one arm. It was a squarish case, of a dark leather and not

of any particular appearance. Yet the man's hand was white, so hard was he pressing the innocuous-looking thing against his side. That was one giveaway. Another was the way his eyes flickered in quick appraisal of the people in the station. Reassured, the man walked to the lockers, deposited a dime in the slot for the purpose, and opened the locker and placed the case inside. Then without a glance to either side, the tall man walked back down the stairs.

Heisty was ready for his deal. . . .

He waited until the vendor was busy with customers. Then, at the exact instant the other was busiest, Heisty walked casually to the lockers and inserted the flanged needle into the lock. A single easy twist of the fingers and the locker opened. Heisty's hand disappeared from view. When it appeared again the case was in it. The door closed, Heisty shoved the case close to his side and made for the stairs. The heist had been successful. . . .

Heisty sat on the bed and looked with a puzzled bewilderment at the case beside him. He scratched at his nose with an indelicate finger. Heisty was more than puzzled. He was completely at a loss. The blasted case couldn't be opened because there was neither lock nor anything else which would serve as such. Further, the case presented an unbroken surface to the eyes. Not even a stitch-line. Once more Heisty lifted it to his lap. He probed with searching fingers, peered with prying eyes, and finally, exasperated, slammed the thing down on the bed.

**B**UT there had to be a way to get it open, Heisty thought. He could hear the sound of something rattling inside when he shook it. Heisty was angry. Not because he hadn't got some-



thing valuable, there had been more than a single instance when that had happened, but simply because the case defied his more than ordinary ingenuity.

"Now, Heisty," Heisty said aloud. It was a habit of his to talk to himself when stumped, as he was at the present. "Let's look at this thing right. There's gotta be somethin' in there what's worth the trouble a guy went through to sneak it the way he did. An' since there is, it hadda be put in there. So just sit here until you figure out how it was done. An' do it. . . ."

Once more he went through the ritual of appraisal and measurement. And again and again. But after another hour in which as little was discovered as before, he gave up in disgust.

"Aah! Might as well go out and get a beer, Heisty," he said aloud. "Maybe the old bean's a little fogged up from this heat. . . ."

Ed Morrissey leaned against the bar and sipped slowly at the cold beer. A dark cloud of disgust rode high on his semi-bald forehead. A fine deal, he thought. His first furlough in five years and what has to happen? His brother-in-law has to have an operation and no hospital insurance, so Ed has to let them have enough money to take it. . . . Hang the luck! Then to get that letter from Frank Semoski out in Fond du Lac that the fish were biting like wildfire. His first furlough in five years. . . . Oh, blast it!

He caught sight of the slender figure slip through the door but for a moment or two made nothing of it. Even when he recognized Heisty, it made little difference to him. Heisty could go out and rob Field's for all Ed cared. Not that he had always felt that way. Heisty was a cross Ed found difficult to bear. For Ed Morrissey was head of the

detail which took care of people like Heisty. That is, they usually did. Come to think of it, Ed thought sourly, everybody *but* Heisty.

Heisty gave the detective a sly grin as he sidled alongside.

"Buy you a beer, Ed?" he asked.

"And why not?" Morrissey said. "Your money's as good as the next man's even though it might not be as honest."

"Aaw, Ed," Heisty said in aggrieved tones. "Is that the way to talk? I always liked you. Always said you were the most honest cop in town. . . ."

"And also the dumbest," Morrissey said.

"Never said it," Heisty made haste to reply. "Can't prove it."

"I can't prove lots of things about you, Heisty," Morrissey said. "Not yet. But someday. . . ."

HEISTY covered his grin by dipping his face into the glass of beer the bartender had brought to him. He liked to rib Morrissey. He liked it because Morrissey, unlike others whom Heisty knew, wouldn't get mad and slap a man around. Heisty finished his beer and ordered another. It was then he noticed the look of despondency on Morrissey's brow.

"What's the matter? You look like you'd lost your badge in a crap game," he said.

"I sometimes wish I could," Morrissey said. "Then I wouldn't lead the dog's life a cop leads. Here I got a furlough and . . . But what's the use of telling you my troubles? You must have plenty of your own, what with trying to duck the police, and figuring out new ways to make larceny pay. Well, thanks for the beer and he seefn' you. . . ."

Morrissey lived on the West Side and took an El home. He climbed the stairs

with unenthusiastic feet and paused for a moment at the newsstand for a paper. The habits of years of police work made his glance travel in surreptitious patterns in its search for wrongdoers. So it was that he saw the tall, slender man by one of the parcel lockers. One look and Morrissey knew something was wrong. There was that agonized expression on the man's face which told him that he had been robbed. Morrissey flipped the vendor a coin and strode to the tall man's side.

"Anything wrong?" he asked as he showed the man his badge.

"Why—yes. I think I've been robbed," the man said.

"You think? Don't you know?"

"Of course I know. I had a case in there. And, as you can well see, it's not there now."

"H'm," Morrissey said. "See anyone suspicious about while you were putting it in there?"

The man grinned pleasantly and something clicked in Morrissey's mind. He had wondered where he saw that face before. It came to him with the other's smile. The man was no other than Phillpots Hooverapron, the world famous inter-space explorer.

"To be quite truthful," Hooverapron said, "I wasn't thinking of looking for anyone suspicious. Matter of fact, I wasn't thinking."

Morrissey looked broodingly at the other and wondered what was in the case that had made Hooverapron look so bad, and what had made him change expressions so suddenly.

"Somtin' wrong?" a voice asked.

They turned and saw it was the news vendor who, recognizing Morrissey, had come up. The flow of after-work traffic had slowed to a mere trickle and the three were alone on the inside platform.

"Got it!" the news vendor said.

"Someone got into the gee's locker, right? Well, I betcha I know who, because I had an idea he was a wrong character."

The tired look on Morrissey's face didn't change. He had known too many of these on-the-spot witnesses. Usually their memories were had and on the stand they didn't know right from left. But sometimes one was found who did know his left eye from his right.

"So you think you *might* know the man, eh?" he asked.

"A cinch. Seen him half a dozen times before up here. Always put the same act on too. Makes like he's interested in the mags on the stand but those fishy eyes of his are busy in everything but the paper. . . ."

Morrissey asked for a description. He made a clucking sound with his tongue after the other got through. Heisty! So that was his new racket. Pretty petty, but that was Heisty. Never the one to take a chance on a long stretch even if caught. He asked some more questions and after he got the answers he knew that Heisty was safe in-so-far as prosecution was concerned. The news vendor hadn't *seen* anything. He was only surmising.

MORRISSEY turned to Hooverapron and said:

"Anything of value in the case?"

"I really couldn't say," Hooverapron said. "I found these little things up on the soft side of Venus, you know, the cloud side. . . ."

Morrissey shook his head as if in understanding.

" . . . Had a man up there make up this case for me and put the little things in. They got a process up there which seals the leather up tight. I've got the solution in my pocket to unseal it. In any event, I was bound for a place where the case would be in the

way so I put it in the locker. Now I won't have a chance to find out what the little things were."

"Little things, eh?" Morrissey said. "Is that the only way you can describe them? If, somehow, we get the case and it's opened we'll want a description of the contents."

"We-el. . . . I guess they look like minnows. . . ."

"Fish!" Morrissey broke in. "Oh fine! By this time they will be just a smell. . . ."

"Not these," Hooverapron said. "That's why I brought them back with me. They're quite the most unusual fish I'd ever seen. That is if they *are* fish. You see, they don't act like fish. Don't even live in water. And they have the darndest habits. . . ."

"Like what for instance?"

"They drank up all my whiskey one night," Hooverapron said calmly, as if a whiskey-drinking fish was a rather ordinary thing. He went on, "And they like music too. At least some kinds of music. In had taste, should someone ask me. . . ."

Oh no, Morrissey thought. Not this, now. Not after the disappointment of not being able to take the fishing trip. This guy might be Mister Big in the exploring field, but as far as Morrissey was concerned he sounded plain goofy. Music-loving fish!

"Ugh, yeah!" Morrissey exclaimed. "I get it. Well, Mister Hooverapron, suppose you leave an address where we can reach you, and when we get a lead on where these *fishes* . . ." He couldn't go on.

Hooverapron reached into his breast pocket and pulled a card from a case and gave it to the detective. "I'll be here tomorrow night," he said.

Morrissey watched the other depart, then pulled his brows flat from the frown they'd fallen into and started

back for the tavern where Heisty should still be drinking his beer. . . .

HEISTY was still drinking his beer all right. But he wasn't drinking it alone, nor was he very happy about it. It had happened a few moments after Morrissey left. Heisty, not too much the one for company, decided a booth would insure the privacy he wanted, a privacy given to thought. So he found one that was empty and whistled up another beer.

"Pretty selfish, isn't he, Hoonso?" a voice piped up, as he started to quaff of the amber-colored liquid.

Heisty looked about, the glass still to his lips.

"I should say. The least he could do is offer us one, Moonso," another voice answered the first.

Heisty placed the glass carefully to the table top and sat there staring straight ahead. Suddenly a howl broke from Heisty's lips. Liquid fire had been poured down his thigh. At least that was the way it felt to Heisty.

"That'll teach him," the thinner of the two voices said.

"Atta boy, Moonso. That'll teach him."

The bartender and half the patrons came running at Heisty's scream of pain. He motioned them back with a lame excuse that he had pinched himself. When the last had left Heisty, still staring straight ahead, said:

"I don't get it. I don't get it. Whassa idea? Watcha tryin' to pull? Where ya at?"

"Why right here besides you," said Moonso, who was evidently the leader of the duo.

Heisty looked down as directed and his jaw went slack at what he saw. It was unbelievable. Yet his eyes weren't playing him tricks. There were a pair of tiny fishes on the seat besides him.

He had to look twice, so small were they. But there was no question in his mind as to their identity. He wet his lips and said:

"Please say it ain't so. Please tell me it wasn't you two who were talking just now."

"But we were," they answered in unison. "And what's more we're going to go on talking until you order us some of that beer you're drinking. And if you don't. . . ."

Heisty had a very good idea what they meant. Before another word was spoken on the subject he shouted for two more steins of beer.

"Pretty thirsty, eh?" the bartender asked.

"Yeah. Yeah," Heisty said.

The bartender had barely walked back to the bar when a couple of tiny splashes were heard and Heisty watched in terrified fascination the swirling movement of the beer. It only took a couple of seconds and the movement was stilled. There on the bottom of the glasses were seen the shapes of the tiny fishes. They were no bigger after their beer drink than before. In a second, and how they did it was a mystery to Heisty, they bopped out of the glasses and snuggled against him once more.

"Good, wasn't it," Moonso asked.

"Very. But let's wait a bit before we have another."

There was a silence which lasted the space of a moment or so. Then Heisty found his tongue:

"How-bow," he said haltingly, "did you get here?"

"Why you carried us," Moonso said. "You didn't know it but when you were fussing with the case you released the mechanism and out we came. We're certainly glad about being here, aren't we Moonso?"

"We sure are," came the echo.

But Heisty wasn't. Already his agile mind was bent in a direction which would soon eliminate them, if he had his way. It was a simple and direct stratagem he was going to employ. They were snuggled close to his side. He started to reach for his glass but never completed the move. Instead his hand swept down hard, the fingers spread and flat so that he couldn't possibly miss the tiny figures. Nor did he miss.

IT FELT as if he'd come into contact with a live wire. For the barest instant his face reflected terrific shock. Then his lips opened and he howled like a banshee once more. The effects of his involuntary shout were immediate. Once more the bartender came running, with half the patrons on either side. The bartender's face had the sign of storm approaching.

"What the devil's going on here?" he said furiously. "That's the second time. I don't want no loonies in here. Well. Spit it out."

"Nothing, George," Heisty said in humble tones. "It's nothin'. I-I got a pain in my side. . . ."

"You got a pain in the head, if you ask me," George replied. "So take your pain someplace else. You're scarin' half my customers out of the joint."

"I think the man's right," Moonso said. "But I don't like him. . . ."

"Who said that?" George said, leaning close to Heisty, his meaty face convulsed in anger.

"Nobody, George. Nobody," Heisty made haste to answer. Already he was moving out of the booth, trying to edge past the large body of the bartender.

"Don't be afraid," Moonso said. "We're with you."

For the first time George's face

showed other than anger. A proper interpretation would have made it fear, though doubt would have been just as good a word. George *knew* Heisty hadn't spoken. He hadn't even moved his lips. George edged out of the other's way. Heisty cleared the booth and steered himself shy of the hulky George. But not far enough. For just as they were even the bartender gave voice to the same howl of pain Heisty had given only a few seconds before.

This time Heisty didn't wait. He made for the door with all the alacrity of a ten year old caught in the act of taking an apple from a fruit stand. Nor did he stop running until he was around the corner and half way down the next block.

Heisty had been aware of voices, tiny pleading sounds, in his mad dash. It wasn't till he came to a panting, breathless halt that he was able to distinguish the words.

"Please! Please! Not so fast," they begged.

Heisty stopped from sheer lack of breath. He leaned against a building wall and panted there until his breathing and heart action were more normal. But not for an instant had those voices ceased their chatter:

"We showed him," Moonso said.

"We sure did," Hoonso said. "Nobody can do that to you. You're our friend. We *like* you. . . ."

Heisty moaned as if in pain. They *liked* him. He was no longer curious as to how they attached themselves to him. Nor did he care about their means of locomotion. He no longer cared about anything except getting rid of them. He put his hand in his jacket pocket, reaching for the pack of cigarettes there. His hand literally leaped back as the fingers felt a clammy fish shape. So that was where they were, in his pocket.

" . . . Let's get something else to drink," Hoonso said. "We're thirsty."

"Please," Heisty said in trembling tones. "Not that again. . . ."

"We'll behave," Moonso said. "We promise."

Ten beers later, Heisty, a little more mellow and a great deal more at ease from all the beer he had drunk, leaned back in the booth of the third bar on their rounds, dropped his head against his shoulder and said:

"I like you guys too. Sounds funny saying that to a couple of fishes. But you guys are good sports. And darned good drinkers, too."

"We like you too, Heisty," they piped in unison. "And we're not thirsty any more. Let's go home."

Suddenly, Heisty was drunk.

"Goo-good idea. Le'sh go home. Gotta shleep. Don' you guys shleep?"

HE WAITED for an answer but there was none. Instead a couple of faint but unmistakable snores were heard. A maudlin smile parted Heisty's lips, and his hand patted the pocket in which Hoonso and Moonso reposed, gently. Heisty had grown fond of his new-found friends. They sure could drink like fishes, he thought as he staggered out of the booth and weaved a path to the door.

It was a lucky thing there was a light standard on the curb before Heisty's hotel. Otherwise he wouldn't have seen Morrissey entering. Heisty was instantly sober. Morrissey could have but a single reason for coming to the hotel at this hour. Somehow he had found where Heisty lived and, worse, had discovered Heisty had taken the case.

"Blast the luck!" Heisty whispered hoarsely.

"What's wrong?" Moonso piped up sleepily.

"There's a detective going to my

room. He's bound to get in and see the case. There'll be the devil to pay. . . ."

"Let's get there first," Moonso said. "We'll take care of him. You're our friend."

There was a way. The freight elevator in back. Heisty knew it would take several minutes for Morrissey to pull his power and get the clerk to open the door for him. Heisty acted swiftly. Luck was with him. The elevator door was open. It took an instant and they were on the floor Heisty had his room on. Heisty unlocked the door just as the elevator came to a halt on the floor level.

He ran to the bed and scooped up the case. But before he could do anything with it, the voices piped:

"Wait! Leave it there."

He dropped it without a word. His eyes almost fell out of their sockets when he saw what happened. A tiny slit appeared along one edge. As suddenly as it opened it closed. Then a luminous cloud formed along the entire case, like a mist enveloping it. The mist darkened, became more intense, and as though Heisty had been the witness to a mirage, the mist disappeared. And with it, the case. The bed was empty.

"Okay, Heisty, let's have it," a voice said from behind him.

Heisty turned, a wide grin on his narrow features. Morrissey, a scowl darkening his face, was facing him.

"Have what?" Heisty asked.

"The case you snatched out of the locker."

"Don't know what you're talking about."

"I figured that. Don't mind if I look around, do you?"

"Go ahead," Heisty said.

Morrissey knew then that the case wasn't in the room. For Heisty didn't

ask if he had a search warrant. The only reason Morrissey had taken the trouble to come to the hotel was on the off-chance that Heisty might still have the goods on him. After all the petty thief couldn't have figured he had been seen. Evidently Heisty had that eventuality in mind. There could be a hundred and one places where the case could be stashed.

MORRISSEY didn't waste any more time. There would be other moments. Somehow, Morrissey knew Heisty was going to make that one mistake all cops know about. Morrissey could wait.

"Okay. I won't waste either of our times," Morrissey said. "Be seein' you. . . ."

Heisty could barely wait the closing of the door. But he had sense enough to wait a few minutes more. When he was quite sure Morrissey wouldn't return, he called in a whisper:

"Moonso . . . Moonso . . . It's all right now. . . ."

And once more there was that peculiar haze and from it the case appeared once more.

"Ho-ho," tiny voices laughed in glee. "Did we fix that one. Weren't we the smart ones?"

"How did you do it?" Heisty asked.

"That's for you to find out," Moonso said. "Now anyone on Venus would have told you. . . ."

"Venus?" Heisty asked falteringly.

"That's our home," Moonso said. "But we like it here now that we met you."

But Heisty was lost in roseate visions. If they could do that to the case they could do it to anything. All he had to do was take them along with him. . . . Holy cats! Why he could walk into a bank. . . .

"So you like me?" he said shrewdly.



It was a pell-mell chase down the street

"Well I like you too. I think we're going to get along pretty good. Aren't we?"

"You bet. Anything you want ask us?" they said together.

Heisty, his mind racing on all two cylinders, already knew what he wanted of them. There was a single question, though.

"The disappearing act" he began. "Suppose I want to take the case along with me. . . .?"

"Oh, that," Hoonso said. "Watch."

Once more it faded from view. But from where it lay, Moonso's voice came:

"Lift it up."

Heisty could feel the reality of the leather even though it appeared he was holding empty air. His question had been answered. All he had to do was take the case with him.

"Look fellas," he said. "I'm going to take you someplace and hide this case. Then we'll have fun, right?"

"You bet!"

Heisty chose the State Street El this time. It was fortunate there was no one watching him because had there been he would have thought Heisty mad. For to all appearances he was placing absolutely nothing in the locker though he acted as if he were. Moonso and Hoonso were in one of the pockets of his jacket. Heisty was whistling as he walked back down the El steps.

There was a certain store on the street, Heisty thought. If he could crash that store what a haul he could make. Suddenly a blank stare came into his eyes. The one thing he hadn't thought of. The two fishes could get in all right, but how was he going to get in? And even if they got in how were they going to get the stuff to him?

As though they had read his mind, Moonso piped up:

"Don't worry about that. When you

get to where you're going just lift us up to the level of your eyes. . . ."

Without question, Heisty did as he had been told when he arrived at the rear of the huge jewelry store that was his goal. For a second he saw two pairs of tiny eyes looking deeply into his. Then all was blank. The next thing he knew he was on the inside of the store. It took only a few seconds, then, his pockets bulging with jewelry, Heisty repeated the business of staring into their eyes. He was on the outside then.

FOR the next week Chicago was treated to the experience of having the most extravagant hurglaries the city had ever known. Banks, jewelry houses, department stores, any place which had valuables in any form, were being robbed by some mysterious means. And no matter what the police did the culprits always escaped. No trap proved efficient, and worse, nobody had even an idea of how it was done.

Only Heisty knew. That is Heisty and his companions. He had left his old hotel and found quarters in a new place. His room was full of loot. But lately he had concentrated on banks. Ready cash was the most negotiable of things. . . .

There were a couple of things which had come to plague Heisty during the last glorious week. For one thing, he was either shrinking away or his clothes were becoming much too large. And for another, he had seemed to have lost his appetite altogether. All he cared for was drink, in any form, beer, water, wine, any liquid. Food no longer was desired. All through the nights, he Moonso and Hoonso would spend their hours drinking. As Heisty put it, "Now I'm beginning to know what it means to drink like a fish."

He didn't quite get Hoonso's reply



to that:

"And why not?"

But the horizon was not altogether bright for Heisty. He had grown quite careless. One night he worked without gloves. His finger-prints were on everything. From then on Heisty's days were numbered.

It was Morrissey who numbered them. He had forgotten about his furlough. The chief of police had asked him to come in on the case. It was Morrissey who found Heisty's prints. From then on it was matter of tracking the thief down. But that proved to be harder than Morrissey thought. Then he figured another angle. The pattern of Heisty's operations was the angle Morrissey worked on. It took him a full four days to figure that out. Four days and four robberies later. But when Morrissey had it, he knew just where Heisty would work next.

The Last Trust and Savings Bank on LaSalle Street. That was going to be the job Heisty would pull next, Morrissey figured.

HEISTY was going to pull his last job. He knew it was his last job. After all, a cool million was enough for any fish, he thought. The Last Trust was going to make that sum possible. He and Hoonso and Moonso were in a tavern far off LaSalle Street. The bartender had given him a strange look as Heisty walked in.

"Midgets, yet," the waiter said as he served Heisty the three steins of beer.

"Aah, blow," Heisty snarled. His height had become a touchy subject with him lately.

Hoonso and Moonso did their diving act into the beer. In a couple of seconds the three steins were empty. Heisty ordered three more. Those too were gone quickly. The waiter re-

garded Heisty with awe as he brought the third round to the booth. Nine steins of beer in a couple of minutes. Wow!

"Gosh!" Heisty exclaimed. "Isn't it hot? Wish I could do what you fellas are doin'. That beer sure looks cool."

"So all you have to do is dive in," Moonso said.

And Heisty did before he was aware of it. But when he got into the glass he found he didn't want to swim, just drink. Finished with the beer, Heisty leaped out again. He started to order another round and gasped at the tiny piping sound which came from his lips. It was a child's voice. Suddenly Heisty was a frightened fish.

"Come on," he shrilled. "We got work to do."

For the first time Heisty didn't have to lift them to the level of his eyes. All he did was think of getting in and he was.

He knew exactly where to go. The teller's cage was closed but he slipped through the door. A large stack of hundred-dollar bills were on the desk. He reached out and grabbed them. And instantly lights blossomed all over. It was the trap Morrissey had laid. Nor was the detective far off. Heisty turned frightened eyes toward the bluecoats, with Morrissey in the lead, who were coming at a gallop toward him.

"Moonso, Hoonso. Save me," he bleated.

"So let's go," they said.

The night air was cool. Heisty knew the consternation of those inside would soon wear off and they would be hot on his trail. Further, since they had trailed him so far they must know where his new hideout was. Heisty felt fear grip him.

"Where'll we go?" he asked.

"I know," Moonso said. "To the

case you hid. . . ."

Heisty could have kissed him. Of course. Where else could a fish hide?

Heisty stumbled several times in his run for the El. His clothes were rapidly becoming altogether too large. First, he discarded his jacket, then his pants and underthings, and last, his shoes and socks. He was quite nude when they reached the El stairs. And those stairs, he regarded them with awe. Each seemed a mile high. Somehow he managed to get to the inside platform.

"How'll we get in?" he asked. "I haven't got a key."

"Like us," they said.

Of course, Heisty thought. Just think yourself in. The leather smelled pleasant and felt reassuring to the touch as he smuggled alongside Moonso and Hoonso. . . .

Phillpots Hooverapron smiled at his friend:

"Oh, I'm not worried. The case will turn up some day."

"What makes you so sure?" his friend asked.

"Well, I couldn't tell the detective the truth. He would have thought me mad. After all, how could I say those *kystupystas* were magical fish from Venus and that the case was their prison. I only pity the poor fool who stole the case. Because if he let them loose. . . ."

"Ycs?"

Hooverapron sighed. "They have a strange power, the *kystupystas* have. They can change a person to their own forms. That is if they get that person to lift them to the level of their own eyes. . . ."

THE END

## NUMBER WORSHIP

By A. MORRIS

EVERY era of man's history has had some form of number worship associated with it. Earliest record of number worship is found in the Biblical times, a form, by the way, which has survived in some respects till today.

This particular form of numerology is called *Gematria*. It was applied to both the Greek and Hebrew tongues and consisted in essence of the following. Each letter of the alphabet of both tongues took on a double meaning. At one time it was used in the spelling of a word and secondly the letters were interpreted as numbers. Doctor Tobias Dantzig, a mathematician who has done considerable work along the lines of number research, implies significance to the fact that Abraham effected the rescue of his brother Eliazar with 318 slaves together with the fact that the names of Abraham and Eliazar added together equalled 318.

The Greeks are reported to have set their heroes on the number standard. Because one hero was greater than another his superiority was divined from the sum to which his name might have amounted.

The numbers of six, seven, forty and sixty held a position of esteem among the Babylonians and Persians. They, however, leaned toward the num-

ber sixty or multiples of it. A Greek general might order a punishment of 300 lashes in keeping with this practice. The Babylonians, especially, revered the number 60 for the rank of their gods was judged according to this system with the highest god being synonymous with this number.

One of the writers, during the time of Luther, did particular research with the number 666 and devoted a large volume written to show that through his interpretation of the number Luther, whose name added up to 666, was branded the Beast of Revelation, or Antichrist. Luther, however, had a different solution. His interpretation of the number indicated the length of the Papal Regime and predicted its rapidly nearing end.

*Gematria* today constitutes a part of the study of the Hebrew scholars. Perhaps it is pure speculation that there is a resemblance between one of the books of the Talmud, namely *Gemara*, and *Gematria*.

A variation of *Gematria* is used on the stage today. The performer repeats a series of numbers which had previously been mentioned by him much to the amazement of the audience. The trick is that the numbers mentioned previously were attributed to the letters or words of any convenient nursery rhyme.

# ACCURACY—PLUS!



By



CARTER T. WAINWRIGHT

THE recent war has made everyone conscious of the phrase "precision mechanics." The newspapers have been full of articles on how highly refined the technical work on airplane engines is, and how carefully and with what accuracy guns are constructed. The epitome of accuracy is to show a mechanic peering at a micrometer and saying to himself with amazement, "Well, that's down to a ten-thousandth now!" That symbolizes the height of accuracy to the average mind. Well, when one is talking in terms of mass-produced articles like airplane engines or any other things that are produced in great quantities, it is logical to think of a ten-thousandth of an inch. But that's only the beginning.

Accurate measurements to a ten-thousandth of an inch may be readily made with a micrometer which operates simply on the screw principle—turn the screw through a definite angle and it advances a definite linear distance.

In industry it is not uncommon to find vastly more precise measurements made every day. This is particularly true of the ball-bearing industry. These little spheres of metal are sorted and grouped within dimensions of a fifty-thousandth or a hundred-thousandth of an inch! To measure accurately these dimensions it is necessary to use highly refined instruments including special micrometers, dial indicator gauges (which operate on the multiplying lever principle) and even optical comparators—which are essentially projecting machines which compare a projected dimension with a precisely made template.

It is evident then, that precision mechanics (in Europe, it is called "Feinmechanik") require the high order ability to measure extremely small linear distances. We may talk of the various types of gauges and instruments designed to do this for a hundred years, but the important thing is to find out how and where the original fine measurements come from. After all, a micrometer is checked against an accurately made specimen-dimension, which is usually a block of steel—"Johannsen blocks"—and while this serves to indicate the accuracy of the micrometer, it tells us nothing about the block itself. Where then do we get our original ideas of accuracy? How can men measure to a millionth or ten-millionth of an inch? How is this possible?

AS USUAL, we go back to Nature. Nature has provided us with a standard that answers all our problems. That standard is—light! The wave-length of visible light measures in the neigh-

borhood of between a hundred-thousandths and a ten-millionth of an inch. All we have to do, is to capture and count these wave-lengths. Fortunately that is easier than it sounds. It is a known fact that when two waves of visible light are superimposed on each other, one of two things will happen—either we'll get a more brilliant beam of light—or we'll get no light at all! This phenomenon, known as the reinforcement or cancellation of light due to interference, is the key to it all. If you spread a small amount of oil on a large vessel of water, you will notice rings and bands of colored light. The oil spreads itself out into a film a few millionths of an inch thick and the waves of visible light reflected from the surface of the oil and the surface of the water show these same interference effects dependant on the thickness of the oil film. This is true of any thin, transparent medium, even the wedge of air between two pieces of flat glass hid one stop of the other. Shifting the thicknesses of our film or the wedge dimensions tells us our exact dimensions through the shift in color. With this simple principle in mind, it is an easy matter then to test the accuracy of our tools. And the test is always reproducible. The wave-lengths of our selected light never vary.

While ordinary precision mechanics depend basically on the interference of visible light for its fundamental dimensions, in practice as we have said, simpler standards are prepared from this—for example, the "Jo" blocks. However in the optical instrument industry these basic tests are of course used all the time. In the preparation of telescope lenses and mirrors, reference is constantly made to interference effects. Lenses and mirrors for scientific instruments are frequently made with an accuracy of half a wave-length of visible light! In inches this may be a ten-millionth. This is not an exceptional case but is a common everyday measurement.

The gigantic two-hundred inch mirror at Mount Palomar is perhaps the acme of precision. It, too, has been ground and polished with this same accuracy and what is more, its mechanical components, like the mount and the bearings, have been extremely accurately built. In fact allowance was made not only for temperature changes but also for the physical distortion of the mirror due to its own sagging weight.

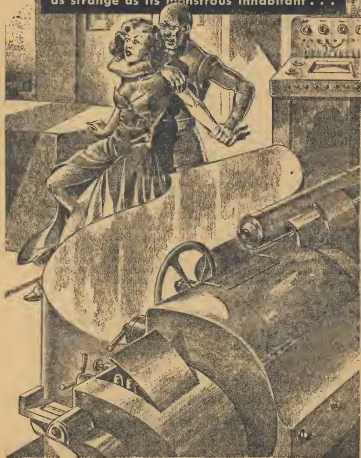
The United States has an instrument industry now second to none. In fact, our pre-eminence in industrial work is directly the result of our vast and skilled instrument organizations. One result of that was the atomic bomb!

# SECRET of the ROBOT

by GUY ARCHETTE



The psuedo-brain of the robot, was a mesh of platinum and wire—but not nearly as strange as its monstrous inhabitant . . .



He clutched her tightly about the neck

THE inter-com buzzed. Dayton put down the report he had been reading, reached across the desk, and pressed a switch.

Ann's voice sounded from the speaker.

"Mr. Morton Thurlow wishes to see you, sir."

"Send him in."

Dayton left the switch on, since he knew Ann would want to listen to his talk with the government investigator. He recalled her use of the word *sir*, and grimaced. Ann went formal only for the benefit of visitors, but this time he sensed a warning behind it. She knew Thurlow's appearance held the answer to the fate of the struggling little company of which Dayton was owner and president.

In the crucial few moments left to him, Dayton wondered with a chill touch of dread what verdict had been reached by the Robot Control Board. Were they permitting him to continue in business? Or had they decided to revoke his license? If the latter case, he knew he would have Thurlow to thank for it. Despite his pompous claims of impartiality, the investigator had been cold and hostile from the very beginning.

Thurlow looked grim and business-like when he strode into Dayton's office. He was short and thin, with pinched, narrow features and severe dark eyes, which held the barely noticeable glitter of contact lenses. He wore a primly tailored suit of dark-blue synthe-wool, and carried in addition to his plastic briefcase a flat-crowned, stiff-brimmed hat of the style which had just lately come into fashion.

Dayton shook Thurlow's hand briefly and saw him settled into a chair. The investigator refused cigarettes, but Dayton lighted one to soothe his uneasy nerves.

"The Board has reached a decision in your case, Mr. Dayton," Thurlow announced, in crisp, dry tones.

"That's very prompt of the Board," Dayton responded. "It's been just a little more than a week since you finished your investigation."

"The Board likes to be prompt, Mr. Dayton. It has the peace and safety of millions of persons to look after. There would be a large number of deaths due to dangerous robots were it not for the watchfulness of the Robot Control Board, you know."

Dayton nodded and said nothing. He knew. The Robot Control Board had been formed by the government as a result of the mass hysteria that had swept the country in the early days of robot commercialization. A number of people had been killed by robots whose faulty mechanisms had caused them to go out of control, though the deaths were claimed as due to deliberate, homicidal attacks. The fact that the initial widespread use of aircraft and atomic power had been the cause of even more deaths was generally overlooked. Robots were regarded as a very special sort of menace, chiefly because of their outward likeness to humanity. They were somehow considered on a level with denizens of another planet, or were feared as being potentially deadly and destructive as any of the man-created monsters of melodramatic fiction.

ON THIS basis the Robot Control Board had come into being. The use of robots could not be prohibited outright, for despite the timidity of the public at large, robots had attained a secure niche in many branches of industry, where they took the place of human workers. The only alternative was to rigidly supervise their use, and the Board did this in a broad way by watching over all phases of robot activity.

Official approval from the Board had to be obtained before certain types of robot experimentation or research could be carried out. A license—granted only after careful tests of the finished product—was required before robots could be manufactured or sold. Board investigators made periodic checks of the factories where robots were made and the various industries where they were used. In cases where robots were found to be potentially or actually dangerous, licenses permitting their manufacture were revoked, their sale was halted, and their further use in industry forbidden.

Dayton thought of this now as he gazed at Thurlow across the desk. A revoked license, he knew, usually meant extinction for a small robot manufacturing firm such as his own. And that would mean personal disaster as well. Every credit he had was sunk in Dayton Mechanicals.

Thurlow withdrew a sheaf of typed pages from his briefcase and frowned at them importantly. "Mr. Dayton, the Board has decided that your license is to be sustained."

Dayton felt a wave of relief sweep over him. "That certainly is good news!"

"However," Thurlow went on, "since I have pointed out in my findings that there is a large element of . . . ah . . . uncertainty connected with the new type of robot upon which your company is working, the Board has recommended that I maintain a close watch."

Dayton was puzzled. "But why did the Board uphold my license if it wasn't fully convinced that the Gammas are harmless?"

"The Board's decision was based to a large extent upon another matter. You see, Gus Hedstrom, the employee who was killed, obtained his job with your firm under false pretenses. To be exact,

he furnished your personnel department with a fraudulent psych record. These records, as you know, are required of workers in the robot industry. They show a worker's intelligence, aptitude, and general psychological fitness for work involving robots.

"By means of a faked record, Hedstrom concealed the fact that he was actually unfit to work on robots. He had a deep, subconscious fear of them, though he refused to admit it. Thus, when he saw the uncontrolled Gamma running toward him, his repressed fears came to the surface. He lost his head. He became caught in the machinery as a result of his own blind panic rather than any threat of danger from the robot itself."

Dayton nodded slowly. "I thought there was something queer about Hedstrom's actions at the time. I knew the robot couldn't possibly have had any intentions of harming him."

Thurlow raised pale eyebrows. "Who knows for certain, Mr. Dayton?"

"The Gammas just aren't built that way. You see, the Alpha and Beta types are automatics. That is, their responses are the result of a limited number of electronic patterns, based on certain key words. Like an electronic computer on a small scale. But the Gammas are inductives. Their responses are the result of actual reasoning. They have colloidal brain-structures, operated by chemicoelectrical memory and integration processes, which are the closest things to a human brain that have ever been built into a robot."

DAYTON leaned forward at his desk, his long, oddly youthful features intense and earnest.

"Gamma-Two, the one that got out of control and indirectly caused Hedstrom's death, was mentally . . . a

*baby*. It had learned to hold itself erect, to move its limbs, and to walk. It had learned to recognize the men in the experimental laboratory as well as a few other objects. It had been coached to perform a few simple actions. But in absolutely no way could it possibly have been taught to endanger human beings. The experimental workers are especially careful about this point.

"Further, being essentially a baby, Gamma-Two couldn't have gone insane. The disorder arises out of fears, repressions, or frustrations in a more mature and highly organized mind. For that reason, a baby can't go crazy, though it may be born an idiot or a moron. To say Gamma-Two had gone crazy suggests a development of mind that it couldn't possibly have reached in the short period of coaching it had been given."

Thurlow lifted his bony shoulders. "Then how do you explain the fact that it got out of control?"

"I wish I knew," Dayton muttered. He ran a hand through his unruly black hair, and his features wrinkled in perplexity. "My experimental staff tried to solve the problem, but they wound up against a blank wall. There was no reason for it, no clue. The whole thing was completely senseless. One moment Gamma-Two was sitting quietly in the laboratory playroom. The next it jumped up as though it had received an electric shock and started running. Then it just as quickly quieted down again. But the damage had been done as far as Hedstrom was concerned."

Thurlow's eyes were narrowed thoughtfully. "From the identification system you use, I presume there was a robot of the same type before Gamma-Two. What happened to it?"

"You mean Gamma-One. There was something technically wrong with its

brain structure. We substituted a new brain structure, and it became Gamma-Two. After what happened, though, we're using another new brain structure. Gamma-Two is now Gamma-Three—or G-3, for short. G-3 has just started to receive coaching, and is mentally still in the infant stage."

"Has it shown any indications that it might eventually prove dangerous?"

"None as yet. But we're taking every precaution."

"Continue to do so," Thurlow advised. "If there is a repetition of the Hedstrom tragedy, the Board will be certain to revoke your license." The investigator closed his briefcase and rose. "Remember, Mr. Dayton, from now on, I shall be maintaining a close watch over the activities of your experimental staff."

Dayton concealed his annoyance behind an understanding nod. "Of course. That's your duty. I'll try to co-operate with you in every way."

Ann Barrett strode into the office immediately after Thurlow left. She was nominally Dayton's secretary, though the ring she wore indicated that the relationship had developed along more serious lines. She had large gray-green eyes and fine-spun brown hair framing features that were vivid and alert. The skirt of her modish neosilk dress barely touched her knees in front and fell to her ankles at the rear.

"The little snoop!" she said. "I heard everything, Jud."

Dayton granted by way of agreement. "The Robot Control Board's bad enough, but fanatics like Thurlow make it that much worse."

HE TURNED abruptly and strode to the window behind his desk, which formed one entire wall of the office. He stared down at the tree-dotted lawn that encircled the build-



ing. The aircar landing was partially visible from where he stood, and in another moment his attention was drawn by a machine taking off. Thurlow, he thought darkly.

Beyond the grounds, other buildings showed, glass and stainless steel constructions that glittered in the afternoon sunlight. Factories and shops for the most part, these made up Chicago Minor's industrial district. In the distance towered the skyscrapers of Chicago Major, wrapped in a web of traffic levels. The sky was dotted with a variety of aircraft, ranging from huge stratosphere freighters to tiny aircars.

Dayton watched Thurlow's machine out of sight, then turned back to Ann as she spoke again.

"I'm glad you're out of that Hedstrom mess, Jud. For a while I was afraid the Robot Control Board was going to run you out of business."

"You and me both," Dayton said. "But there's still Thurlow. Things are going to be difficult with him breathing down my neck."

"Why worry about Thurlow? Unless—" Ann caught Dayton's arm. "Jud—are you thinking we'll have the same trouble with G-3?"

"I wish I knew. Point is, we don't know what happened to G-2, and so there's no way of telling if the same thing will happen to G-3."

Ann shook her brown curls somberly. "That's taking a terrible risk. I wish you'd give up the Gammas, Jud. If another man dies, you'll be put out of business for certain."

"If I give up the Gammas, I'll be put out of business just the same," Dayton returned, shrugging. "There's no future market in automatic robots, and that's what we're turning out now. The trend is toward inductives. Most robot firms are experimenting with them, and the first to turn out a successful model

is going to have a corner on customers. Needing credits like I do, I want to be first, of course. Then I'll finally be able to marry you and buy a place out in the country."

Ann's features momentarily softened. "That would be swell. But, Jud, I can't help thinking about what might happen if you keep on experimenting with the Gammas. I don't know how to explain it, but there's something wrong about them—something . . . well, unearthly."

"Your feminine intuition, eh?"

"All right, make fun of me."

Dayton took the girl's small chin between his forefinger and thumb and regarded her gravely. "Snap out of it, Ann. You're showing symptoms of robot-phobia. In spite of the fact that the Gammas look human and are built more closely along human lines than robots have ever been built before, they're still robots. There's nothing unearthly about them."

"I hope not, Jud—because I *do* want a place out in the country."

"Not any more than I do." Dayton brushed the girl's lips with his, then turned toward the door. "I'm going up to see the men in the experimental lab. They'll want to know what Thurlow said."

LEAVING Ann at her desk in the outer office, he took an elevator to the wing on an upper floor where the experimental laboratory was situated. This consisted of several large, bright rooms, furnished with a bewildering assortment of machinery, tools, and instruments. In the main room Emil Dornhof was bent over a workbench, delving industriously into the vitals of a complicated piece of apparatus. He was a robotics engineer, as Dayton himself had been before the growing details arising out of the commercial-

ization of his work had forced him to devote himself solely to business matters.

Dornhof jerked around with startled suddenness when he became aware of Dayton's presence. He was heavy-set, inclined to stoutness, and had jovial features under a shock of wiry gray hair.

"Uh . . . hello, Jud. I thought for a second you were G-3, sneaking up on me."

Cold fingers of alarm touched Dayton. "Good Lord, has it been doing that?"

"Well, sort of. Nothing to worry about, though. G-3 has just developed a habit of poking around, and Bart and I haven't grown used to it yet."

Dayton rubbed his jaw, frowning. "I didn't know that. And I don't like it. G-3 seems to have matured much too fast."

"It isn't a human being, you know," Dornhof reminded. "The colloidal brain has a lot of unknown possibilities, and quick learning may be one of them. At any rate, I'm trying to find out just how the colloidal brain works." Dornhof gestured at the apparatus on the workbench beside him. "This is the device I told you about some time ago. The psycho-scope, I call it."

Dayton nodded. "I gave you a go-ahead on it. How have you been getting along?"

"Better than I expected. But the details weren't difficult to begin with. My idea was based on the standard mind-reading equipment used by police authorities. And their device was nothing more than an improvement of the old electroencephalograph, connected to an ultra-shortwave transmitter. Anyway, my psycho-scope ought to show us how G-3's mind works. I'll be finished soon, and then we'll see."

"Keep on with, Emil," Dayton said.

"A thing like that is just what we need. Let me know—" He broke off as a voice spoke sharply from one of the adjoining rooms.

"Hey, where do you think you're going? Come back here!"

Dayton recognized Bart Welch's tones, and turned toward a doorway diagonally across from where he stood. A figure appeared in the opening. At first glimpse it might have been taken to be that of a man—a man dressed strangely in white neo-silk shorts and plastolex sandals. After a moment, however, a distinct quality of oddness about the figure would have become apparent. There was a *smoothness* in its appearance, a beauty and perfection completely inhuman. And its weirdly glowing eyes, the utter lack of expression about its pale, classical features, would have explained why. That startlingly human yet queerly inhuman figure was a robot.

DAYTON knew he was looking at G-3. The robot returned his gaze impassively, then turned with a flowing, deliberate motion as Bart Welch appeared behind it.

Welch's gaunt, freckled features were exasperated. A biophysicist and amateur psychologist, he was tall, bony, and stooped. His thatch of bristling red hair seemed to add to his present aggressive mood. He glared at G-3 and demanded:

"Well, what are you up to now?"

Slowly the robot lifted an arm, pointing in Dayton's direction. Its flawless plastic lips opened and quivered. A faint, wheezing sound issued from the diaphragm in its throat. Then, blurted, as though formed with the greatest difficulty, a word became audible.

"Boss!" G-3 said.

Welch glanced around, saw Dayton, and smiled wearily. "Oh, hello, Chief."

Dayton was staring at the robot. "He . . . it . . . why, it seemed to know me!"

Welch moved his bony shoulders in a shrug. "G-3 seems to know everything. It's a regular perambulating encyclopedia in some ways. How it does it beats me. I haven't had time to teach it much so far."

"The colloidal brain may be unusually receptive," Dornhof put in. "Even telepathic to a certain extent. Who knows?"

"Seems that way," Dayton muttered. "I last saw G-3 several days ago. But then its brain-structure had just been connected up. I don't understand how it could possibly have recognized me a moment ago." He frowned at the robot, then shifted his gaze to Welch. "You mentioned that G-3 seems to know everything. How long has that been going on? Ever since the brain-structure was put in?"

"Not exactly." The biophysicist hesitated. "I didn't want to worry you, Chief, so I didn't say anything before. G-3's knowledge seemed to come all of a sudden. In the beginning it just fumbled around like any baby would. Then a few days ago, while I was coaching it in a simple routine, it gave a jerk something like G-2 did before it started running out of control. After that it acted . . . well, as if it were a lot more intelligent than it had been at first. It actually seemed to have gained a lot of new information—things it couldn't have had time to learn."

"And toys," Dornhof said.

Welch nodded his red thatch. "Yeah. G-3 hasn't shown any interest in toys, Chief. It's as though it weren't a baby somehow. I can't figure it out."

Dayton glanced at the beautiful man-like figure of the robot. G-3 was a baby only mentally, he knew, though its mature, virile appearance made it difficult

to accept the idea. He wondered suddenly if the maturity of its body were not the explanation for what seemed the unusual maturity of its mind.

He mentioned the thought to Dornhof and Welch.

"It's possible," Welch said slowly. "In fact, anything is possible. We're dealing with a robot of an entirely new and superior type, you know, not a human being. G-3 may be a robot superman, for that matter, with potentialities so tremendous that the strange intelligence it has shown so far may be just a feeble beginning."

"We'll know for certain when G-3 finally learns to co-ordinate properly," Dornhof added. He glanced at Dayton. "You see, it's doubtful whether G-3 sees and hears the same things we do in all instances."

"What do you mean?" Dayton asked.

"JUST what Bart has been saying," Dornhof returned. "G-3 isn't a human being. It's constructed along fundamentally human lines, but for the large part its mind and body are alien. So who can say if it sees and hears the same things we do? It has to learn first. And when it finally learns, we'll be able to tell from its actions just what sort of intelligence and abilities it has."

"Look at it this way," Dornhof went on. "Suppose, Jud, that your brain were somehow removed from your human body and placed in G-3's robot body. Do you think you would see and hear things exactly the same as you did while in your human shell?"

"It would be different," Dayton decided. "I would be receiving sensations through channels much different from those to which I had been accustomed."

"Exactly. Someone would say 'It's a beautiful day,' but to you it would sound like 'Gookie bloop,' or something of the sort. You'd have to *learn* that

combination of noises meant 'It's a beautiful day.' Likewise, a cube might look like a triangle to you, and you'd have to learn that what looked like a triangle was actually a cube."

"Look at G-3!" Welch exclaimed suddenly.

The robot was quivering, its flawlessly moulded plastic arms half raised. Its lips worked, and faint hissing sounds came from its throat.

Dayton felt a stab of dread before he understood that G-3 was trying desperately to speak. At last it managed.

"Boss!" it said. There was a momentary silence. The robot seemed to be gathering itself for another effort. Then: "I . . . I hees . . . I hez . . . hez-z-z-z—" Again it fell silent. Its lips continued to work, though no further sound issued from them. At last a quiver of futility ran over its perfect form, and it relapsed once more into immobility.

"What in the world?" Dayton muttered. He swung back to Dornhof and Welch. "What do you make of that?"

"G-3 tried to tell us something," Welch said.

"It knew what it wanted to say," Dornhof mused. "But it couldn't make sounds that we would understand. Evidently it has to learn that, too."

Dayton threw up his hands in despair. "The whole thing is driving me nuts. There's something very wrong with G-3. That's painfully obvious. In fact, it sticks out all over the place. But nobody seems to know exactly what is wrong, and why!"

"We'll know soon enough," Dornhof comforted. "My psycho-scope should give us a lot of answers."

"But in the meantime?" Dayton demanded. "Suppose G-3 runs wild like G-2 did?"

"I don't think that will happen," Welch said. "G-3 had the same kind of

mysterious shock as G-2, but it didn't get out of control. In fact, it didn't act dangerous in any way, aside from becoming a sort of robot prodigy. No, Chief, I'm almost dead certain that G-3 won't make any trouble."

"It better not," Dayton granted. "That investigator from the Robot Control Board—Thurlow—was here a while ago. He told me the Board is allowing me to keep my license, but he has orders to keep a close watch over the work we're doing with G-3. If anybody else gets hurt, we're through—all of us."

"YOU," Dayton told Welch, "may feel sure that G-3 won't make trouble, but we've got to be positive of that. We have to take precautions of some kind. I'm going to have the doors in here reinforced. They're going to be kept locked, and G-3 is not to be allowed to wander out under any circumstances. And as a further precaution, I want you two to wear guns at all times. If G-3 makes a break, regardless of whether or not it has actually gone out of control, I want you to use them. Is that clear?"

Dornhof and Welch nodded, the engineer gravely, the biophysicist with obvious reluctance.

"One thing more," Dayton resumed. "I want one of you to report to me every day on the progress being made with G-3. And above all, don't be afraid of worrying me. That way you'll be cutting my throat to save my neck. I want straight facts. If there's going to be any trouble from G-3, I want to know about it before it pops."

The two assistants nodded again. Dayton gestured in finality and turned to leave. His last glance at G-3 left him with a disturbing impression. Was it merely a trick of the light—or was there a faint suggestion of hostility

about the robot's otherwise impassive, perfect features?

The impression faded from his mind in the days that followed. Incessant waves of business matters swept everything else from his thoughts. Dayton Mechanicals was enjoying a period of peak sales, though a small margin of profit was actually involved. Dayton was selling his Alpha and Beta type robots at sharply reduced prices in an effort to clear out present stocks. He knew that the heyday of the automatics was fast approaching its end, and he wanted to be ready when the end finally came. The moment that news of a successful inductive type robot was announced, sales of automatics would cease almost instantly.

Thurlow appeared at the plant almost every other day, though he evidently tried to make his visits as unexpected as possible. Dornhof and Welch were on the alert, however, and the precautions Dayton had outlined were already in effect.

On the whole, Dayton found the reports of his experimental staff increasingly reassuring. G-3 was learning rapidly—somewhat too rapidly, it seemed to Dayton. But the robot had thus far shown no slightest signs of dangerous behavior. It spoke with growing fluency and responded to commands with an ease and promptness that grew daily. Already it was able to perform a number of simple tasks about the laboratory.

DAYTON'S hopes mounted. By all indications the Gammas, as represented by G-3, were proving to be an astonishingly successful type. And as far as he knew, they were the only successful inductive robots that had been produced as yet. To Dayton that meant he would have a practical monopoly on the inductive robot market when he

finally began full-scale production of the Gammas.

"Things are looking up," he told Ann one morning. "I think you're going to get that other ring you've been waiting for—and a place in the country."

She caught at him, her eyes shining. "Jud! It's almost too good to be true. I was beginning to think it would never happen."

"I've stopped further work on the Alphas and Betas," Dayton went on. "Everything is ready for production of Gammas, and that'll begin as soon as I give the word. I'm just waiting for Dornhof to finish his psycho-scope. The device should clear up any last doubts about G-3 and in this way definitely prove whether or not the Gammas are actually a safe type for commercialization."

"Just what will the psycho-scope do, Jud?"

"It should show us just what sort of a mind G-3 has. We've been wondering about that all along."

Dornhof reported a short time later. The psycho-scope was completed, and tests on Welch had indicated the device as being highly satisfactory.

"I haven't used the psycho-scope on G-3 yet," Dornhof explained. "I want you to have the honor, Jud."

"Fine!" Dayton approved. "Get everything ready. I'll be right with you."

Dayton lost no time about appearing at the experimental laboratory. With a few swift words to Ann about what was to take place, he hurried toward the elevators.

The laboratory door was still kept locked, and he let himself in with his key. Besides Dornhof and Welch, Ann was the only other person who had one.

The psycho-scope had been placed on a table, at which two chairs had been arranged. Dornhof was bent over it,

making a few final adjustments. He looked up and nodded as Dayton appeared.

"All set, Jud. Bart is keeping G-3 busy in another room, so it won't know anything unusual is taking place until we're ready."

"Does G-3 know what the psychoscope will do?"

"I don't think so. Bart and I have been careful not to discuss the device frequently or in great detail. G-3 has asked about it, of course, but I explained it was just a machine to measure brain impulses."

"Asked about. . . ." Dayton echoed in a whisper. He shook his head wonderingly.

Welch appeared from one of the adjoining rooms. The biophysicist looked disgruntled. "Twice in a row!" he growled.

Dornhof chuckled. Then, noticing Dayton's perplexity, he explained, "Checkers. That's how Bart was keeping G-3 busy. And Bart got licked."

"Checkers!" Dayton gasped. "G-3 can play checkers—and beat a man at it?"

Dornhof chuckled again. "That's right. Just take a good look at Bart's face."

"I never was very good at checkers," Welch said defensively.

An instant later G-3 itself strode into the room, turning toward Welch. "Play another game, Mr. Welch?" the robot asked, in distinct, slightly metallic tones.

"No!" Welch snapped.

G-3, Dayton noticed, looked downcast. The robot's features no longer had their former complete, automaton-like lack of expression. It seemed as if, among other things, G-3 had learned to operate its facial muscles. The robot's similarity to human beings

was now truly uncanny, especially since it had been dressed in more conventional clothing, which concealed to a great extent the unnatural perfection of its body.

G-3 nodded as it became aware of Dayton's presence in the room. "Hello, Boss."

"Hello," Dayton responded faintly. He felt an eerie sensation at being able to talk to the robot as easily and glibly as though it were a person. What was the answer? What would the psychoscope reveal? He thought of the coming examination eagerly—and at the same time, with dread.

Dornhof finished his adjustments and gestured to the robot. "Come over here, G-3. We're going to play a more interesting game than checkers."

"What do you want me to do?"

"Just sit down in this chair."

G-3 glanced slowly at the psychoscope—and hesitation seemed to shine in its glowing eyes. "Are you going to measure my brain impulses?"

"That's right," Dornhof said. "And we're going to compare them with the Boss'. Interesting, eh?"

"Yes."

At Dornhof's gesture, G-3 took one of the chairs at the table on which the psychoscope stood. A headpiece, which was chiefly a wire frame supporting two electrodes that fitted one at each temple, was placed on the robot's head. Wires trailed from each electrode and disappeared into the sprawling, intricate mass of the device.

Dayton, in the chair on the opposite side of the table, was fitted with a headpiece similar to that worn by G-3. The electrodes pressing snugly against his temples made him uneasy. He gripped the arms of his chair in growing tension.

"That's that," Dornhof said. "Everything's ready." He glanced at Dayton sharply, warningly—and pressed a

switch.

After a moment Dayton felt a deep humming within his head. It grew deeper, and then he had a chillingly weird sensation of rapport—of *contact*.

He went rigid as wave after wave of thought poured into his mind. Thought that explained. Thought that revealed—devastatingly. A realization grew within Dayton that shook him with amazement to the very core of his being.

An instant longer he forced himself to breast that incredible mental flood. Then he leaped to his feet, tearing the electrodes from his head. Breathing heavily, he stared with a kind of wild fascination at G-3.

The robot was rising also. Its own hands came up, jerking away the electrodes. It faced Dayton, muscles quivering beneath its smooth plastic skin, an expression of panic frozen on its perfect face.

"What . . . what happened?" Dornhof faltered, alarm in his voice.

Welch started forward, his freckled face pale. "Chief—what's the matter? What did you find out?"

"Guns!" Dayton whispered, forcing words through the shock that gripped him. "Get your guns!"

**D**ORNHOF and Welch stared in numbed bewilderment. It was only when G-3 whirled and darted toward the door that they finally moved. Dornhof's hand reached under his laboratory smock, and Welch fumbled at a hip pocket. They got their weapons out at almost the same time, but before they could point them at the robot, which was tugging frantically at the locked door, something happened.

The door opened.

Ann came into the room, her key still in her hand. Her eyes found Dayton, and she spoke swiftly.

"Jud—ThurLOW is waiting for you in

your office. He wants to see you at once. He didn't explain, but he says it's important."

Even as the girl spoke, a realization that something was wrong appeared on her face. She glanced around puzzledly and then her eyes widened and her hand went to her throat as she saw G-3 crouching beside the door. In the next instant the robot leaped at her, caught her arms, and swung her in front of it as a shield.

Ann gasped in dismay.

The fingers of Dornhof and Welch froze on the triggers of their guns.

Dayton started forward, concern for Ann dominating the horror that filled his mind.

"Get back!" G-3 snapped. One of its hands closed menacingly about Ann's throat. "Don't move—or I'll kill this girl."

Dayton stopped. The robot was abnormally strong, he knew—much stronger than a man. A twist of its hand would snap Ann's neck as though it were a dry twig.

"What . . . what are you going to do?" Dayton husked.

"I'm going away," G-3 returned. "I'm going where you won't be able to find me. I want to . . . live. I have as much right to live as you do." With a quick motion, the robot drew Ann into the hall and slammed shut the door.

Despair held Dayton like an enormous weight. If the robot escaped, the news was certain to leak out. It would be the end of all his hopes.

He thought abruptly, sickeningly, of ThurLOW—present in the building this very minute.

Jerking out of his paralysis, Dayton lunged at the door. Dornhof and Welch were at his heels as he ran into the hall.

G-3 was at the elevators, about to enter one of the cars. Ann was strug-

gling in the robot's grasp.

"Wait!" Dayton cried. "Listen to me!"

G-3 paused, glancing back. Dayton spoke swiftly, desperately.

"If you run away, who is going to replace your power cells and body fluids?" Dayton demanded.

"Why, I . . . I could do that myself," the robot called back.

DAYTON shook his head. "You know you couldn't. The fluids have to be made according to an exact formula—and you don't know that formula or the process. Furthermore, suppose you need repairs? Will you know what to do? Where will you get the materials?"

The robot was motionless, a growing consternation on its plastic features.

"And," Dayton pursued, "suppose people find out you're a robot running loose? They'll hunt you down like a mad dog. . . . G-3, let's talk this over. I lost my head when I found out what you really were, but now I understand. You'll be allowed to live."

"Are you trying to trick me?"

"I mean what I say. Watch." Turning to Dornhof and Welch, Dayton ordered them to put their weapons on the floor and move away from them. The two complied.

"But what will you do with me if you are going to let me live?" the robot demanded.

"Put you to work in the laboratory," Dayton explained. "We can use your help. And you need ours—don't forget that. Now release Ann, and we'll forget this happened."

"All right."

Turned loose, Ann ran sobbing into Dayton's arms. G-3 followed slowly, chastened, and still a little uncertain. Dornhof and Welch began hahbling questions.

"I'll explain later," Dayton told them. "Right now I have to see what Thurlow wants."

The investigator was fuming impatiently. "Really, Mr. Dayton, I do not like to be kept waiting."

"Sorry. I was having an important conference with my experimental staff." Dayton sat down behind his desk and lighted a cigarette. "What did you want to see me about, Mr. Thurlow?"

The investigator became businesslike. "It may surprise you to know that the government has taken a great interest in my reports concerning the work you are doing with inductive robots."

Dayton stiffened. "The government?"

"Exactly, Mr. Dayton. The Robot Control Board considered your work remarkable enough to be drawn to the attention of certain higher agencies. As you know, the numerous atomic power plants scattered about the country are operated by the government. Robot workers of the automatic type are used on jobs where radiations would be deadly to human beings. But the nature of these robots has limited their use, which has been a serious handicap. Your inductive type robots, however, could remove this handicap and in general make the use of robot workers in atomic power plants more widespread."

Thurlow leaned forward. "The government is prepared to offer you an exclusive contract for inductive robot workers. The Robot Control Board has decided that your Gammas are harmless enough, and if your own private conscience agrees with this decision, the contract will be forthcoming immediately."

Dayton nodded slowly. "Yes, I'm sure the Gammas are harmless."

"Very well." The investigator rose and extended his hand.



Shortly after TburLOW had gone, Ann ushered Dornhof, Welch, and G-3 into Dayton's office. Dayton explained the purpose of TburLOW's visit, and was met with a barrage of incredulous stares.

"But how could you accept the contract?" Welch exploded. "After the way G-3 acted—"

"What's the explanation, Jud?" Dornhof broke in. "I tried to pump G-3, but he wouldn't tell me anything before you did."

DAYTON grinned. "The explanation was under our noses all the time, but we were too blind to see it. Remember the mysterious jerk G-2 was seen to give before it started running wild? G-3 did the same thing—only G-3 seemed to become unusually intelligent afterward. That alone should have tipped us off—that and the strange fact that, for all its intelligence, G-3 still had to learn how to use its body. Why didn't its intelligence and the knowledge of how to use its body come at the same time? Why did one come so far ahead of the other?"

"I've got it!" Dornhof cried. "Jud—what you're hinting at is that . . . something got into G-3."

"And G-2 before that," Dayton said. "That's why G-2 ran wild. The . . . something that got into it was evidently scared silly at what had happened."

"But *what* got into G-2?" Welch demanded. "And what's in G-3 now?"

"A . . . well, call it a free intelligence. Or a disembodied mind." Dayton glanced at G-3. "Tell them who you are."

"I am—or was—Gus Hedstrom."

Dayton's grin broadened at the utter stupefaction that appeared on the features of Dornhof and Welch.

"I tried to tell you that in the laboratory one day," G-3 went on. "But I

wasn't able to use my vocal apparatus well enough. Later I decided it would be better for me to keep quiet about it. I knew you were suspicious of me, and I didn't want to do anything that might make me lose my new body."

Dornhof gulped his voice into action. "But if you're actually Gus Hedstrom, you're *dead*! How could you possibly come back?"

"There is no such thing as death," G-3 stated. "There is only a liberation of identity—or consciousness, or mind. And I did not come back, because I did not go anywhere to begin with. A liberated identity does not go anywhere. It stays right here. My present body just made it possible for me to regain physical contact."

"And why not?" Dayton demanded of Dornhof and Welch. "G-3 was built along fundamentally human lines. It functions like a human being. So why shouldn't it be a perfect shell or container for human intelligence?"

"But how did you get into the robot's body?" Welch asked G-3.

"I don't know how to explain it. But I think you might understand if I say it happened somewhat the same way as radio waves get into a radio. There was . . . a harmony."

"And if we built other Gamma bodies?" Dayton suggested. "Would that happen again?"

G-3 nodded. "I have no doubt about it. There are many identities who were liberated prematurely like I was. Because of this they are unable to fit in with . . . with the other life. I'm sure they would be happy to regain physical contact."

"I'll be happy to help them," Dayton said. "Because we won't be producing robots. We'll be producing—human beings." He smiled and reached for Ann's hand.

# The Man in the Moon

by Lester Barclay

*You had to wind the doll to make it walk—but what was it that made it talk! Then it began to walk without winding . . .*

"ALL of the science of this world doesn't amount to a hill of beans," Professor Kerperschmerz said with deliberate and ironic emphasis.

Larry Kenton, Kerperschmerz's secretary, smiled agreeably. He was quite used to the Professor's sudden and inexplicable outbursts. They, in fact, were the real reasons for his staying on as he did. He finished putting a "thirty" on the report to the National Geographic they had been doing, turned to face his employer and lit a cigarette.

"For a guy who just wrote what you did," Larry said, "that's treason . . ."

"Treason!" Kerperschmerz shouted heatedly. "Truth, you mean! The trouble with our so-called scientific society is that we do nothing scientifically. We operate on hypothetical premises. We prove things to each other's satisfaction. What was it one of the men at Los Alamos said? 'To tell the truth, we don't quite know where up is.' A seemingly simple word like "up" defies definition. Why, should anyone say again that the moon is made of green cheese, or that there is a man in the moon, could find as reasonable a premise for his statement as any scientist with a more complex reason . . ."

Larry smiled and the grin gave an animated expression to an otherwise

somber look. He looked quite attractive in fact. "Something like that deal from Shakespeare, eh? 'There are more things. . . .'"

"Precisely!" the other said. "The ancient alchemists, the Merlins, the prophets . . . H'm!" Kerperschmerz sighed deeply. He went on after a few seconds. "There are times when I wonder and all the years of my research seem rather futile."

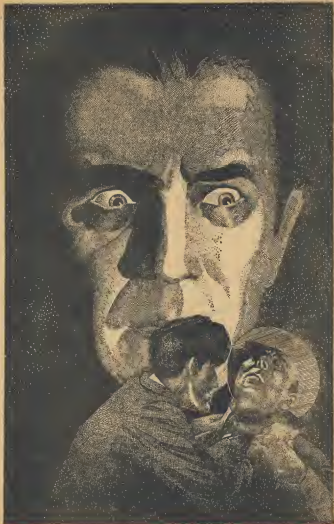
There was a discreet knock at the door and at the Professor's shout to come in a very pretty girl entered. She had a slender and lovely body which showed mature and graceful lines. At sight of her Larry arose, the grin on his face even wider and his eyes crinkling deeply at the corners.

"Lisa! How nice," he said.

"Hello Lisa," Kerperschmerz said. "What brings you here?"

"Well, dad," she began, an impish look in her eyes, "I thought that it's only fair to remind my father that he has a daughter now and then. Said daughter a pretty and intelligent girl, quotes. Not mine. Jed Salishury's . . ."

The smile vanished from Larry's lips. Jed Salishury! It was like waving a red flag in front of his eyes. Ugh. He shook himself free of the anger which had enveloped him at mention of the other's name. Lisa's father let his eye-



He had to obey the command to kill

brows lift a little.

The girl went on:

"... And now that I've reminded said pater, what does he think of my new dress?"

The old man shrugged his shoulders in resignation. It was one of the hazards of being a father, he knew, passing judgements on his daughter's dresses, but knowing nothing of either material or style. He always said the same thing. He said it now: "H'm. Very pretty—very pretty indeed."

She did a pirouette for the admiration of the two men, then coming to halt did a curtsy. Still smiling, she turned and started for the door.

"Why don't you stay?" Larry said, stopping her as she reached for the knob.

He didn't see the cloud form in her eyes. He only heard her light-hearted reply:

"Can't, Larry darling. Got lunch to eat. With Jed . . ."

The two men looked at each other when the door closed on the girl. Kerperschmerz grunted an unintelligible something. Larry said nothing. But the bitter down-drawn look on his mouth spoke as loudly as any words could have spoken.

"Larry," Kerperschmerz said after a moment, "you're a good bit of a fool . . ."

Larry turned a startled look in the other's direction.

"... I said you're a fool. Do you think the girl doesn't know how you feel?"

"Maybe. But if she does, she doesn't care."

"Only because you're doing nothing about it," the old man said.

"What the . . . !" Larry burst out, then checked himself. "Sorry. Are we going to do the Fissure Selectivity report for Gransted?" he continued in a

flat voice.

Kerperschmerz gave him a sidelong look, shook his head at what he saw in the other's eyes and said, "I suppose so. Gransted is as big a fool as the others. But we might as well give in to his whimsies. Let's have lunch first, right?"

"Right."

LARRY KENTON stretched, yawned widely and blinked the tiredness from his eyes. He placed the cover on the typewriter, closed up the desk and grinned over to the professor who was stuffing his pipe full of the horrible tobacco he liked to use.

"Another day, another fissure report," Larry said lightly.

"Yes. Lesson number one hundred in how little we know," Kerperschmerz said.

"But add them altogether," Larry began.

"And we increase the sum total of our knowledge to zero," the old man said bitterly. "Well, my boy, let's call it quits. Coming up?"

"No. I think I'll go for a walk," Larry said.

"No dinner?"

"I think I'll have it out tonight," Larry said.

The old man understood. It was Lisa again. He wished that his secretary had a little more drive. Kerperschmerz had an idea that Lisa wasn't as casual as she pretended about her interest in Kenton. For once, however, Kerperschmerz decided not to interfere.

Larry left by the side entrance. He was just in time to see the Town and Country roadster which pulled up to the front door. Lisa stepped out, turned and said something to the man seated at the wheel. She smiled at an answer he made and still smiling turned and trotted up the stairs. Larry waited until the car drove off before continuing

with his walk. The bitter expression had returned to his face, and the down-drawn look to his mouth.

The old boy is right, he thought as he walked down the tree-lined avenue. A lake breeze fluttered his hair and made him draw his topcoat closer about him. You lack drive. Lisa doesn't care about money. Her father has enough for the two of them and more besides. Enough surely so that she wouldn't want for anything. Salisbury had a lot of money, true. Oh, heck! There was no getting around it. It was the money . . .

He turned the corner of Rush Street; his favorite restaurant was half-way down the block. But there was a crowd gathered around something on the walk. He started to edge his way past but stopped at the sound of a voice:

" . . . Almost human, ain't they? Now watch the little one . . ."

Larry thrust his head over someone's shoulder and looked down at what the others were watching. A dozen metal mannikins were strutting their robot walk on the sidewalk. A tall man in dark suit, a box slung over his shoulder in which were to be seen others of the little figures, was watching his wares in their performance. There was a crooked smile on his lips and his hawk's nose was dilated in pleasure as he turned now and then to survey the crowd.

The metal caricatures had been constructed cleverly. In fact some of them exhibited almost human characteristics. Larry grinned with the rest watching, as two of the figures stopped in their strut and moved toward each other. Their little metal arms moved much as a human's does. And when they were almost face to face their binged jaws opened and they appeared in conversation with each other, their arms moving in simulated animation. Suddenly the hawker reached down and gathered them in.

"All right now, folks," his voice boomed hoarsely. "You've seen the little men at work. They're only fifty cents each. The half of a buck . . . a lotta fun at a small price. Step up, folks. The first to buy gets two for the price of one . . ."

THERE was a child clinging close to his father's band. Larry saw the round eyes look upward in a pleading gesture. The father grinned and stepped forward, a half-dollar in his fingers. The hawker laughed aloud and handed over two of the metal things. Another bought and another, then the crowd left. A lopsided grin appeared on the hawker's mouth as he saw that Larry was the last of the crowd. Larry too was about to continue to his destination when the hoarse voice stopped him:

"Tell you what I'm going to do . . . F'r the price of a quarter, the fourth of a dollar, you can have one of these little metal men. Now don't turn away, mister. They're more fun than people. Watch . . ."

He placed one of the figures on the walk and fiddled with a small key at the back of the figure. Almost instantly the figure began its ridiculous strut. But this time there was something odd about it. It headed straight for Larry. When it was almost on Larry, the man stepped aside. And as though it were directed, the mannikin followed. Larry laughed in delight and made a skipping jump to the right. Again the metal figure followed.

" . . . Wherever you'll go," the hawker said. "They're made that way."

"By George! They are clever," Larry said. "I'll take this one."

The hawker scooped the figure up and pulling a bag from his basket placed it inside. Larry had a dollar bill and while the other fished for the change Larry gave him a wondering

look. There was something odd about the man's face. It was long, lean, the dark hair parted in a widow's peak, the cheekbones high so that there was a decided V shape to the face. Suddenly Larry became aware of the other's eyes on his. He looked directly into the dark orbs so close to his and felt a distinct physical shock. There was something vaguely familiar about this man. Larry pocketed the change absent-mindedly and placed the hag between his arm and ribs.

"... Wherever you go," the hawker said in parting.

THE dinner had been good so Larry ordered a second cup of coffee. The restaurant was no longer crowded. In fact there was only one other customer besides Larry. Later, after the theater, there would be many others. This was the slow period.

The waiter brought his coffee over. Larry shoved closer to the edge of the table in the booth he had chosen, and in so doing felt and heard the crackle of paper. Looking down Larry saw the hag. He grinned in remembrance of the antics of the metal mannikin. Suddenly he decided to try the figure out again. He fished it from the hag and placed it on the table top. There was a small metal key at the rear of the figure. Larry wound it tightly and set the figure down. Nothing happened. A puzzled frown worried the man's brow. He shook the figure and set it down again. Nothing.

Anger darkened Larry's face. Then the blood ebbed and he became calm. "Rooked! I'll be darned," he whispered. "At a half a huck a throw that guy must reap a fortune. H'm . . ."

He picked the thing up again and began a minute examination of it. There wasn't much to be seen. It was painted

in very bright colors. A clown's costume in fact. There was a tiny set of gears inside which evidently operated the moving parts. Larry knew he had done nothing to disturb those gears. He had walked the half block to the restaurant and on entering the booth had made sure the hag was out of harm's way.

He held the figure up so that the light shone directly on it and went over the figure with searching glance, from top to bottom. There was a Pierrot's cap on the head and below it a painted mask. Larry was about to set it down again, when he stopped. There had been an odd glitter from behind the mask. His eyes crinkled in wonder, then, as though clearing it of the foolish thought which had come to it, he shook his head and placed the figure on the table again.

"What were you thinking about just now?" a tiny voice asked.

Larry turned his head from side to side. There was no one to be seen of course. The other diner was a good thirty feet removed from him. Once more the voice was heard:

"No! Down here . . ."

Larry did as he was bid. His cheeks which had been only a moment before full of blood, paled to a waxen color. It was impossible that he had heard aright. There was only this metal figure . . . His eyes went wide. The jaws were moving on their tiny hinges:

"Pick me up."

Larry picked the thing up again and held it close to his eyes once more. This time he looked closely at the mask. Something *did* glitter behind it. He shuttered his own eyes until they were mere slits and peered deep behind the mask.

"Ooh," he moaned suddenly as a sharp pain struck him directly behind his eyeballs. The pain left as quickly as it had come and he opened his eyes

wide. He shook his head and went back to looking at the mask. No. There was nothing behind it.

He set it down again and suddenly the figure began its robot's strut just as it had done on the sidewalk.

"Hey!" a husky, heavy voice said. "That's pretty good. Where'dja get it?"

LARRY looked up and saw the waiter, a broad grin on his wide, beard-darkened face, looking down at the figure moving along the tablecloth.

"Watch it!" the waiter suddenly said sharply.

Larry turned in time to see the figure at the very edge of the table. His hand shot out swiftly and gathered it in just as it started to tumble off.

"Thanks!" Larry said. "I—I was taking it home for the kids," he said haltingly in explanation. Suddenly it seemed childish this playing with toys. Yet he had said what he did. He wondered why. It wasn't what he was going to say.

"Sure," the waiter said. "I got five of my own. Keep me broke all the time with their toys . . ."

"Yeah," Larry said. "Well, guess I'll take the check."

THE house was dark but for a light in the Professor's study. Lisa's room was at the rear. Larry had a sudden wild desire to see whether she was still up, but changed his mind. Instead, he went up to his own room which adjoined Kerperschmerz's. He didn't turn on the light, but walked to the window which was open and looked out into the night.

There was a full moon down near the west horizon. What was it the Professor had said earlier? Something about, "a man in the moon being possible." Well . . . by George! It did look like a man's face up there. Larry

stared more closely and the shifting edge, blurred and fuzzy-looking, seemed to swim into closer focus. And suddenly the features were sharp, clear.

Larry stifled the exclamation which came to his lips. He had recognized the face. It was that of the hawker he had seen earlier that evening. There was only the face. But it filled the whole of the orb above. There was that same saturnine look to the eyes; there was no mistaking the part of the hair, the cheekbones, the jawline. The figure got larger and larger until the whole plane of the night was filled with it. Larry brought the palms of his hands to the side of his face and squeezed. It was as though he was trying to squeeze this nightmare thing from his mind.

There was the sudden terrifying sound of a screaming voice in the room. And later, after a few seconds, an answering shout from outside the room. But Larry heard only the first scream. A midnight pool of still waters closed over him, like a blanket of silence.

LARRY! Larry!" the voice summoned him from the darkness into which he'd fallen.

He opened his eyes. He was on a merry-go-round . . . No. It wasn't that. He, he . . . Nausea gripped him and he gritted his teeth trying to hold it back. It passed after a moment and things became clearer. A bearded face was bent over his and peering over the bearded one's shoulder was a pale face made paler by the dying light of the moon. It was Lisa and her father.

"All right, boy?" Kerperschmerz asked in anxious tones.

"Yeah . . . Yeah!" Larry sighed and struggled erect. "Whew!" He whistled softly. "Wonder what made me pass out that way?"

"I heard you scream," Lisa said soft-

ly. "I was terrified. Good heavens! I thought someone was killing you . . ."

So it was he who had screamed. A shudder shook his frame in the memory. He walked with slow deliberate steps to the bed and sat down on it. He grinned up at them. "I guess the show's over," he said. "If you don't mind . . . ?"

The Professor understood. He took Lisa's arm and steered her from the room though it was obvious she wanted to stay and learn more of what and why it happened. Larry waited until they had gone before going back to the window. The reason for his fainting lay out there in the night. A silver circle of gleaming light. The moon. *And the man in the moon!*

But the face of the moon was serene. There was nothing to be seen. He blew his breath out and went back to the bed. There was something very queer about the whole business, but what it was escaped him. He felt it had to do with the hawk and the metal mannikin. He looked over to the dresser where it lay still wrapped in its hag.

When Larry returned to the bed again it was to go to sleep, a deep dreamless sleep.

THE call for Kerperschmerz came late the next afternoon. It was from the university and from the Professor's aggravated tones Larry had an idea it had to do with a new experiment in nuclear physics they were on. Kerperschmerz hated it. He said the whole thing amounted to a way of making a war of extermination and that one day the thing'd get out of hand and a whole planet would become rubble in the Milky Way.

" . . . At least it'll give you a chance to get some painting in, Larry," Kerperschmerz said.

"And a nice day it is for that," Larry replied.

Larry's room had a good north exposure. The light was right and Larry dug the latest of his water colors out. A building had been going up almost across from his window and he'd been getting some of the details. He placed the board in position and started to work but after a half hour of concentrated effort found he was getting nowhere.

He sighed despairingly and took the heavy paper off the stand and placed it back in his file. The file stood alongside his dresser. As he straightened he saw the hag again. An idea came to him and he reached for fresh paper. He placed the mannikin in such a way that it appeared to have just stepped through the window and was standing on the sill surveying the room. The light threw highlights which made for an interesting composition.

Larry went to work swiftly. There was enough color in the model to satisfy any artist. In two hours Larry was almost half done. He was getting a small detail of the pantaloons when there was a light tap at the door. He muttered a malediction on the person's head, whoever he may be, and opened it wide. It was Lisa.

"'Lo, Larry," she said. Her eyes went to the drawing board. "Ooh! I'm sorry. Didn't know you were at work . . ."

He threw the door open wider and used his arm in an extravagant gesture:

"Come in! A pleasure having you. Your dad got a call from the school so I got a break."

She sat down on the bed and regarded the painting of the clown with critical measuring eyes. She shook her head in admiration after a few minutes and said:

"Not bad, Larry. Good, in fact. There are times I wonder why you stay on. You've got a talent for that."



He followed the line of her pointing hand with his eyes and smiled amiably. "Sure. Art-school stuff . . ."

Suddenly she was angry.

"Why do you run yourself down like that?" she asked. "I know you're not asking for compliments."

"I wasn't running myself down. I was merely stating a fact. Looks good to you, but give it to someone who knows and they can pick a million holes in it. I do this for fun."

She smiled then. "Okay, so it's fun. Which is why I came. Know what tomorrow night is?"

He shook his head.

"Hallo'een Eve," she said. "Party, fun, and you're invited."

He was tempted to ask if Salisbury was coming but refrained knowing it would only anger her, and serve no good purpose.

"Of course I'll be there," he said.

She got off the bed and as she walked to the door, said:

"Jed and I'll pick you up then. Seven sharp . . ."

HE SIGHED heavily as she walked out. He turned back to his painting, but somehow the light was no longer good. He made a few more brush marks and then sat there, staring at the paper.

"Who is this Jed?" a voice asked.

"Jed . . . Jed Salishury," Larry answered absent-mindedly. Why . . . No. You can't talk . . ."

It was the metal clown again. "Why don't you get rid of him?" it asked.

Suddenly Larry no longer thought it strange that the mannikin could talk. In fact he thought it the most natural thing.

"Rid of him? How?" Larry asked.

"What a question! How many ways are there? You're going to a party tomorrow night. A costume party. Go

there early. As a clown. There'll be a dozen clowns. Only he sure to take me."

"Take you?" Larry heard himself say. It was as if there was another person doing the talking. Yet he heard his own voice. "Why?"

"I like parties," the mannikin said. "But I almost forgot. This man you're working for. I want you to get something for me . . ."

Like a robot, Larry asked:

"What do you want?"

"When he returns from where he went he will have a report on something. It will be a very secret report and you as his secretary will have to make a detailed flow sheet of a series of operations. You will make that report out in triplicate. I want one copy, you'll keep another and the third . . ."

"The third . . . ?" Larry asked in that flat voice.

"I will tell you about that later," the mannikin replied. "Ah! The old man has returned . . ."

A distinct shock passed through Larry at the last words. He shook his head violently and looked down at the little metal figure. It was standing on the sill just as he had placed it there. Larry swallowed hard. He wondered if he was going mad. This business of imagining that the mannikin spoke . . .

"Larry!" the Professor's voice boomed in the hallway.

Larry arose and stepped to the door.

"Got to break away from that, Larry," Kerperschmerz said, pointing to what the other had been doing. "Just had some wonderful news. Come on down to the work shop."

Kerperschmerz unzipped his bag and pulled a whole sheaf of papers from it. He spilled them over his desk and turned a broadly smiling face to his secretary.

"Wonderful news," he said again.

"They verified my findings. We have isolated a simple atom from something other than uranium. This is all hush-hush stuff. You've got the notes I dictated. Let's go to work from them."

FOUR hours later Larry yawned and closed up his notepad. The old man blew his breath out in a sigh of satisfaction. It had been brain-breaking work, but it was done at last. He didn't look over to where Larry was sitting. He kept smiling and looking down at the jumble of papers in front of him.

"Okay, my boy," he said after a moment. "You keep one set and I'll take the other. Got to return one to the University. We'll keep the other for our file. Good Lord I'm hungry! Dinner ought to be ready."

"Go ahead, sir," Larry said. "I'll join you later."

The Professor nodded and took Larry's suggestion. He didn't notice that Larry had turned so that his body was shielding the typewriter from view. The instant the door closed Larry went to work. He had made sure that the Professor hadn't seen him do his reports in triplicate. Two of the copies he stuck in his breast pocket, and the third he placed where Kerperschmerz would find it at hand. Then he also left.

LISA, for once, ate dinner in. It seemed that Salishury had a dinner appointment, something to do with business. And for once Larry was voluble, talking with many gestures of his arms and hands and a great animation of his usually severe features. He made jokes, kidded the girl at his side and spoke with so much verve she was delighted. Even Kerperschmerz, usually interested in his food and nothing else, beamed with delight. It was apparent that he liked Larry to be that way.

For once the dinner ended too quickly. It was Lisa who arose as a signal it was over.

"Oh, Larry," she said with half a sigh. "I'm so sorry. But I've got to be running along. Now why couldn't Jed have said that he'd be busy the rest of the evening? As it was I promised him I'd meet him later. 'Bye . . .'"

"Larry!" the Professor boomed after the girl left. "For once I don't have anything to say. Act like that, my boy, and the girl will be eating out of your hand. And with my blessing."

But Larry wasn't listening. At least not to the old man. Another voice, one heard only by himself, was talking:

"I want you, Larry. Come up here to me. I have something to tell you," it said.

"... Larry!"

"Hub?" Kenton asked, bewildered.

"Don't fall asleep on me," the old man said in aggrieved tones. "I was talking to you."

"Sorry, sir. I got to thinking of something, I guess. Which reminds me. Lisa asked me to come to a party tomorrow night. And I accepted. So I'd better get to work on a clean copy of what we did this afternoon. Won't have time for it tomorrow."

"Put it off," Kerperschmerz said, his heavy, bearded face showing pleasure at what Larry said about Lisa asking him to the party. "I won't need it for a few days. Besides . . ."

But the last was said to Larry's back. Kenton had already left the table and was almost at the door leading to the hall. The old man shook his head in wonderment, then filled his pipe reflectively. Something was bothering the boy. Something serious. It had to do with the night before, Kerperschmerz was sure. H'm.

The first place Larry looked to was the window sill. It was bare. His mouth

fell open and his eyes widened. The mannikin. It should have been there.

"Why didn't you come sooner?" a tiny metallic voice asked.

Larry whirled in the direction of the voice. The tiny figure was back on the dresser. Larry knew he had left it on the window sill.

"Come here, I say," the tiny voice commanded.

Larry stiffened at the words, and began a robot's march toward the figure on the dresser. His arms were close to his side and his face moved in an automaton's strut. His face was set and his eyes stared straight ahead, unseeing.

"Understand me," the tiny voice said in its metallic tones. "You no longer have a will of your own. From now on, every move, every breath you take is at my behest. You have the copies I instructed you to make?"

Larry reached into his breast pocket and pulled them forth. At a move of the metal arms Larry handed them into the miniature fingers. But they were too small to grasp and hold the sheaf of fine papers.

"Keep them," the figure said. "Tomorrow night you will be told what to do with them. Now I will leave you. Put me on the sill again."

Larry did.

"Open the window a trifle," came the next command.

Larry shoved the window up some three inches.

"Now look out; look up at Satana . . ."

LARRY looked up, up into the face of the moon above. There was a strange shifting movement and he felt a queer lightness take hold of him, as though he was air-borne. A biting cold took hold of him and he felt a tremendous surge of air past his face. Suddenly the moon was larger, closer; it

filled the whole of the sky above. Then it was no longer the moon, but a strange world, barren, rocky, wild, and filled with tiny orange-colored flashes. Downward he was swept until he seemed to be flying above the crests of the hills and mountains. He saw vast armies deployed on the plains below. And when he looked about him he saw great saucer-shaped things flying about. There issued from openings set in the saucer things, orange balls of flame. . . .

A voice came to his ears:

". . . We sent some of them over, a year ago, to reconnoiter the scene. We lacked the one thing necessary for an atom bomb, uranium. Now we can make them out of the metal we have plenty of. I will be the monarch of all this. For with the atom bomb, I will win out . . ."

Larry looked down and saw that it had been the metal mannikin who had been doing the talking.

". . . I wanted you to see why I am using you," the figure went on. "Because when I am done there I will come here. I once made a promise to someone that I will rule this world. I am going to keep that promise. . . ."

Larry shook his head in understanding. There was a promise and it was going to be kept. An old something stirred at the back of his mind. It stirred but went no further.

"Now go and talk to the old man . . . suggest he bring the papers to his room. When you've done that return here and go to sleep."

Larry pivoted on his heels and left the room. Kerpenschmerz was still in the dining room. He was puffing reflectively at the pipe he had lit when Larry left the room. That same somber tone was in his voice when he asked:

"Something wrong, Larry?"

Larry found it difficult to concentrate. His eyes just didn't seem to focus

properly and his mind was not as alert as it should have been. He knew that the eyes of the other were probing deeply into his own but there wasn't anything he could do about it. There was something he had to do . . . had been ordered to do! Ah, yes.

"Aren't you going to bring the papers upstairs, sir?" he asked.

Kerperschmerz's thick brows rose alarmingly. He nodded several times, as if he had agreed with something he had puzzled over.

"Why, yes, Larry," he said. "Very soon."

"Good," Larry said, and turned on his heels and went back upstairs. He had done exactly as he had been ordered to do.

THE alarm went off as usual; Larry always set it for seven. The Professor liked an early morning start. He believed the best part of the day was the morning hours. Larry turned his head and reached to shut the alarm off. His head seemed to be made of putty and his arms and fingers ached as though some one had been beating at them through the night. There was an odd pain at the back of his brain, a feeling of dullness, emptiness. He shook himself and threw the bed clothes to one side. The shower, too, for once, had no invigorating qualities. It was merely wet. He cut himself several times while shaving. And breakfast was tasteless. Kerperschmerz was already at work when Larry opened the study doors.

"Ash! Good morning," the old man smiled in greeting. "I hope you slept well . . .?"

"Badly, sir," Larry said. "Don't know what's wrong. Could be a cold."

"Then you heard the excitement?" the old man asked.

"Excitement?"

"Yes. Someone broke into my room

and took some papers," Kerperschmerz said. "Rather valuable ones too."

"It's a good thing you kept the report down here," Larry said.

"But I didn't," the other said. "I brought them up . . . just as you suggested."

"I suggested . . ." Larry said falteringly.

Kerperschmerz changed the subject with a startling abruptness:

"Larry. How's your vision lately?"

"Why—why I imagine it's all right."

"I think you need glasses, Larry."

Kerperschmerz had an odd avocation. He believed that many of the ills of men stemmed from the fact their eyes were bad. He had a complete ophthalmic set-up in his study. He arose and took Larry's arm and steered him to the chair before one of the machines he used.

"Now relax for a couple of minutes while I set this up," he said.

Larry watched him bring a varicolored disk close to where he was sitting. Kerperschmerz set the disk to whirling. Then he threw a strong light onto it. He stood slightly behind and to the right of the disk.

"Relax, Larry," he said. "Look at the disk . . . that's it. Relax. In a few seconds your eyes will begin to feel heavy. Now, now, gently let them close. You are at peace; you feel very drowsy. Sleep, Larry, sleep. That's it. Now tell me, Larry . . ."

"LARRY!" the voice seemed to come from a long distance.

Larry Kenton blinked his eyes open and looked into the dark orbs of the Professor's.

"Guess I fell asleep," Larry said sheepishly.

"Only for a few seconds. I was wrong, Larry," the other said. "You don't need glasses after all. Well, shall we get to work?"

THE day passed quickly. Larry willed it so. This was the night of the party. And he wanted to get out and get a costume. The Professor seemed bemused or more absent-minded than usual. More than once Larry had spoken directly to him and received nothing but a blank stare in return. But the old man also seemed to want to get through quickly. By the time lunch was ready their work was done.

Larry Kenton raced up the stairs and into his room. There was a slight drizzle falling and he wanted his raincoat. Something made him turn to the window and he saw that the window was now closed.

"Well, don't look so surprised," the tiny voice said. "You closed it after me last night."

A feeling of dread came over Larry. He had completely forgotten the mannikin so wrapped up in coming events was he. He was afraid to look at it, perched on the dresser top.

"I couldn't carry the papers off so I burned them," the thing said.

Remembrance flooded Larry's soul. Those papers the Professor had spoken of. They were the atomic report papers.

"That's right," the metal thing said. "Come over here."

And once more Larry became the other's automaton. But this time completely.

"Get a costume exactly like mine," he was told. "Tonight you will carry me with you to this party. There I will tell you what to do."

THERE was a knock on the door.

Larry opened it and Lisa stepped into the room. Her father, dressed in leather shorts and Alpine hat stood behind her. And alongside him was someone dressed in plain clothes. It was Jed Salisbury. Larry's glance trav-

eled from one to the other.

"How cute," Lisa said. "Look! He went out and bought a doll dressed exactly like he."

"Guess he wants to win the door prize," Salisbury said. He was a tall man, lean featured. It made him look queer because he had a rather heavy body, thick through the chest. Larry looked into Salisbury's face and felt an odd feeling of fear. He had seen that face before. He looked away and his eyes widened when he saw Kerperschmerz. Larry thought he was going mad. The professor's face had changed in some subtle fashion. It looked like . . . then the resemblance escaped Larry.

"Let's go," Lisa said. "Jed will meet us there later."

The party was at one of Lisa's friends. All through the ride, Larry kept the metal clown close to his side. Only the Professor seemed aware of it. But he said nothing, though his eyes never stopped their watch of Larry.

There were a great many people there, almost all in costume. Larry found a corner and a chair and seated himself while Lisa went to greet friends. He did not see Kerperschmerz seat himself close by. The metal mannikin sat close to Larry's side.

"Now then," the mannikin said. "Soon there will be someone here to whom you will give those papers you have in your pocket. You will set me down and wind me up and call the people's attention to me. While they are watching me you will slip the papers to this man. Understand?"

"I understand," Larry said in a dull voice.

There was a bar set up not far from where Larry was sitting. Larry felt a sudden desire for a drink. He rose and started for it. But just before he reached it the Professor stepped to his side.

"Larry! I want to tell you something," Kerperschmerz said.

Larry tried to step aside but the other blocked his path.

"Look at me," the Professor said grimly.

Larry looked into the brown eyes of the bearded man. There was a message in those eyes. Larry read the message and shook his head in understanding. Then the Professor stepped aside and let Larry continue.

It wasn't more than a few minutes after Larry returned with the drink that the mannikin said:

"I see him. He has come. Quickly! Call the people around. Wind me up and set me going. . . ."

They gathered around and laughed uproariously at the mannikin's actions. But Larry was already edging his way past them. The strange man was waiting for him in a corner that was dim of light. But it was not so dim Larry could not recognize the stranger. It was the bawker he had met a few nights back.

"The reports! Quick!" the man said, his lean saturninely Satanic features alive with emotion. He thrust out a slender muscled hand. Larry reached into a pocket of the costume and started to hand the papers over. But as the other reached for them Larry pulled his hand back. A strange message had come to his senses from some mysterious source he could not locate with his powers of observation:

"Do not give up what you are carrying," the message said.

And like a bolt from the blue, the sodden feeling of the past few days was swept aside. Larry looked into the man's queer eyes, so bright, so wild-looking, and felt such a surge of anger he could not contain himself. Shouting imprecations of which "traitor" was the least, he leaped on the man.

SAVAGE blows rained down on Larry's face but he did not feel them. His fingers were wrapped around the man's throat and he knew only that he had to squeeze until the other was limp. Then he would be dead. And dead, his evil would die with him. He heard as from a great distance, the shouts of men and the screams of women. But his fingers did not loose their hold. He only squeezed harder. It seemed a lifetime went by. Then there was a convulsive shudder of the figure and the man's weight became a dead thing. There were hands pulling at his arms and a voice booming in his ears:

"Larry! Larry stop! He's dead!"

Larry looked up and saw the Professor at his shoulder.

He turned and the figure fell limply to the ground.

"What happened?" he asked in bewilderment. "I knew he wanted something of me."

"He was a hypnotist," Kerperschmerz said. "I knew what had happened when I saw you this morning. So I hypnotized you and got out of you what happened. Last night I became suspicious. Instead of the papers they wanted I took some chess problems with me. They burned those."

Larry realized though, that the Professor was not acknowledging the reality of the mannikin.

"Today," Kerperschmerz went on, "I gave you a post-hypnotic suggestion and a short while ago I stopped you and put it into effect."

"Then this man," Larry said, gesturing with his head to the corpse on the floor, "was an enemy agent?"

"Right. He used the mannikin as an agent of hypnosis."

"Look, Larry," someone said.

They turned and saw it was Salisbury who had come in. He was carrying the mannikin in his fingers.

"This little thing. It stopped working while the fight was going on. . . ."

Both Kerperschmerz's and Larry's eyes went wide when they saw the mannikin. A thin thread of red had run from the corner of the open lips. It looked like red paint . . . or blood!

"Y'know, Larry," Kerperschmerz said softly, "this makes you a hero.

And women love heroes."

Larry looked past his employer's shoulder and saw why he had said that.

Lisa had just stepped into the room. There was a woman by her side and the woman was busy explaining what had happened. But Lisa was looking at Larry. And there was no mistaking the message in those warm blue eyes.

## FIENDS OF THE TELESCOPE



By



O. I. ZEESOFAHR

THERE are about a hundred and fifty thousand people in the United States who have a rather unique hobby—making telescopes. A good many of them read science-fiction and are interested in it, and realizing that they can't make a trip to the moon or into space for quite some time to come, they do the next best thing. They make the trip visually. In fact there is probably a rather nice correlation between readers of s-f and telescope-makers.

There is only one way—as yet—to make an interplanetary trip and that is by eye. A good telescope will reveal some amazing astronomical facts. Note the expression, "a good telescope." If the amateur astronomer had to buy a good telescope, he would not be an amateur astronomer for the simple reason that such a 'scope is beyond the financial means of the average fellow. However there is a solution. Amateur astronomers make their own 'scopes. And the making is not as difficult as one might think.

The would-be astronomer obtains two pieces of glass, usually about six inches in diameter and an inch thick, some abrasive material like carborundum or aluminum oxide, and he has his tools. With very little else, except some skill and plenty of patience it is possible to manufacture a good reflecting Newtonian telescope. One of the pieces of glass is fastened to a table-top. Some water and abrasive is sprinkled on it and the other piece of glass is placed over it. By a combined linear and rotary motion the glasses are rubbed together and the top piece of glass automatically hollows itself out into the shape of a spherical mirror. The bottom piece, the "tool" is discarded. Between the start of this procedure and the end is plenty of sweat and labor of course. Succeedingly smaller grades of abrasive are used until finally toward the end, the final agent used is extremely fine jeweler's rouge, the same material that goes into face powder.

After the mirror has been made spherical, a few millionths of an inch more of glass are removed from its center by a variation in the grind-

ing technique, thus converting the mirror into a parabola. This mirror then is silvered or aluminized and properly mounted in a tube of wood or metal. The result is a telescope of high quality, depending of course on the care with which it was made, with a magnifying ability of in the neighborhood of 250 diameters.

That's all there is to making a telescope. Naturally, there is more detail to this than has been described, but in essence that's all there is to it. The rings of Saturn, the moons of Jupiter, the craters of our own moon—all these and much more can be seen in lavish detail through such a telescope. Usually the amateur astronomer is not satisfied with merely a six inch 'scope. Almost invariably he attempts in making larger sizes up to twenty and twenty-four inches in diameter. These vastly increase the power and penetration of observers. Some amateurs do such excellent work that they are called upon by professional observatories to supply skilled labor, both in observing and in manufacturing. When the two-hundred inch telescope was built in California, even when the mirror was cast by Corning in New York, almost in every stage of its production, amateurs were to be found in all capacities ranging from directors of the operations to assistants. Amateur astronomical skill has vastly aided professional astronomy. The basis of almost any science today lies in the quality of the instrumentation that accompanies it. Amateur radio is a familiar example of that. Lesser known but equally efficient is the aid amateur astronomers have rendered.

During the war, it was necessary for the government to have large numbers of roof prisms for fire control apparatus for big guns. No manufacturer could produce these on a mass production scale without long experience. Amateur astronomers however offered their services and hundreds of them, working at home in their basements, supplied the necessary thousands of prisms made to an accuracy of a few millionths of an inch until the government could get the factories in order. Hail the amateur!



Bancroft lifted his heavy sword over his head and brought it down with a tremendous sweep



# The Wandering Egos

by Emmet McDowell

**P**LAIN JOHN BANCROFT was alone.

A reading lamp burned beside his bed, but he wasn't reading. He lay on his back in gaudy blue and white pajamas, rigid as if seized by a cataleptic trance.

Shadows gathered about the walls and corners of the room. The butt end of a cigarette smoked in an ash tray beside the reading lamp. A copy of Kammerer's *Importance of Acquired Characteristics* lay on the floor where it had slipped from his nerveless



**Discovering who he really was gave  
John Bancroft the problem of his life!**

fingers.

Pain hattered at Plain John's mind as he struggled to free himself from the intangible paralysis which held him in thrall. Not a muscle quivered. His green eyes remained open, unwinking, staring out of this world.

Sweat beaded his forehead. He was aware but dimly of the room, and even that was slipping his grasp. He might have been a corpse except for the uncanny perspiration dappling his gaunt white features.

Someone was talking to him.

The words flowed stronger, became distinct. His despairing mind, clutching at sanity, tried to shut out the voice, but it persisted.

It said: "The greater moon. The land of the hereafter. You, I presume, are one of those deluded youths who have taken the sacred book of Astronomy in a literal sense. . . ."

Plain John found himself staring overhead through a clear plastic rind, staring up into the vault of space. A huge pale green disc hung in the black sky, irregular shadows giving the illusion of continents and seas.

"The Old Ones," the voice went on; "were a simple forthright people. They thought the greater moon was a world like ours, and even worked out an elaborate planetary system to support the theory. . . ."

Plain John tore his eyes away from the swollen luminary. A black cowed figure, short, gross, stood at his elbow. The priest's features were hidden in the shadow of his hood.

Plain John realized that he was in a luxurious houndoir. Beside the bed crouched a girl blonde to the point of colorlessness. His eyes slid beyond her to a second girl, black headed, bold eyed, and the name Myrrha occurred to him accompanied by a warm feeling of camaraderie.

The fourth figure in the room was another man, barbarically dressed in gaudy silks, a naked blade in his hand.

With a start Plain John realized that he was holding a two handed, six foot claymore, himself.

Plain John said: "Then the books of Science are lies?"

He hadn't intended to say that. He didn't know where the words had come from. With a peculiar sense of detachment, he realized that the language was not even English, but some foreign yet oddly comprehensible tongue.

"Lies?" The black cowed priest echoed. "No. Not lies. Our forebears were too naive to interpret the books of Science, my son. . . ."

Plain John realized that the foppish man with the naked steel was manœuvring behind him. Oddly, he understood that they all were leagued against him here. The black cowed priest, the elderly dandy, the blonde girl.

Only Myrrha, the black headed wench in the yellow tunic was on his side!

Plain John turned on his heel, strode to the window, gazed out on the moonlit scene.

He hadn't willed himself to do so. It was as if his body had become independent of his mind.

FASCINATED, bewildered, he found himself gazing down on a fabulous city spread below him. The chamber seemed to be in the top of a tower flush against the dome of transparent plastic which enclosed the entire city sealing it hermetically against—what?

Many-storied towers with airy bridges span between them wove an impossible cobweb. There was only one discordant note—the ugly disfiguring temple of the God in the Machine!

It reared from the exact center of

the city like a black and gleaming bive pointing upward at the clear transparent dome.

He realized the priest was still talking.

"Science is symbolic. There's truth in the ancient myths, but it's allegorical. The greater moon is the symbol of heaven, the land of abundance and joy which we can only attain by death."

As if the words were a signal, the priest added in a changed ominous tone: "My son, you are over long in making up your mind."

Plain John spun around, again without volition of his own. The black cowed figure had drawn a gleaming blade of steel.

"There's only one end for heretics!" said the priest and advanced shuffling across the floor.

Myrrba, the black headed girl, screamed suddenly: "Behind you Baldrik! Behind you!"

On the quiet suburban street outside Plain John's house, a police prowler car drifted between the avenue of maples.

"Judas!" hurst out the blue uniformed figure at the wheel. "Look at that!" With a wrench he swung the car into the curb, leaped out, followed by his mate.

A tall gaunt man, barefooted, in blue striped pajamas was stumhling aimlessly along the pavement. Light from a street lamp fell across his face. His features were drawn and white, his green eyes blank as polished stone.

The driver of the police car, a big young fellow going a little fat, seized Plain John's pajama clad shoulder and shook him.

Plain John's head rolled, then lolled forward on his chest. His knees huddled. He flowed to the pavement like water.

"Hopped to the gills!" said the

second cop in disgust.

The driver was kneeling beside Plain John's sprawled figure. He rose slowly with a face gone suddenly pale.

"He's dead."

"The hell you say," ground out the second cop in disbelief.

They both stared down at the body. By some trick of the street lamp it seemed to glow faintly with an inner light of its own.

The driver rubbed his eyes. The second cop said: "Gawd!" in a low voice.

The body was growing misty, undefined. They could see the sidewalk through it. Then it was gone!

The two police stared at each other aghast, glanced behind them nervously. The maples arched darkly overhead. The houses and apartment buildings were asleep except for an occasional troubled eye that was a lit window.

"You saw it?" said the driver in a frightened voice.

The other nodded.

The driver said: "Let's get the hell out of here!"

The two men tumbled nervously back into the prowler car. With a whine of acceleration it shot up the street.

DOCTOR NICKOLAI KURLOV stroked his short black beard, said dryly: "Your dreams are nothing to concern yourself about. Frankly, Miss Headly-Smith, you're frustrated. My advice to you is to get married at once."

The woman was young, overdressed, over plump. She said, "Oh doctor," in a faint voice.

The psychiatrist suppressed a grimace, made haste to usher her out of his private office. He glanced around the reception room, saw with exasperation that his nurse, Ann Lang, was not at her desk. The sumptuous waiting room was deserted.

The woman showed no inclination to leave.

He said, "Go home, Miss Headly-Smith; take a long walk; tire yourself. . . ."

The outer door of the reception room was flung violently open. A young nurse in a crisp white uniform whipped inside, slammed shut the door as if the devil himself, were at her heels.

Miss Headly-Smith screamed, swayed.

The nurse ignored them both. She hurled herself against the door with an air of desperation. Her blonde hair, which usually looked as if it had been lacquered, was mussed, one lock hanging over her left eye.

The door rattled, bulged inward.

"No!" panted the girl.

"Miss Lang!" The doctor's eyes opened in surprise. "Ann! What's the meaning of this?"

The nurse turned her head, said in a jerky voice: "It's Plain John! He—he's gone berserk!"

Miss Headly-Smith keeled over in a faint.

"Plain John? Let him in. We can't have him creating a scene outside in the corridor."

"You let him in," said the nurse.

Doctor Kurlov stepped over the unconscious form of Miss Headly-Smith. "Take care of her," he flung at his nurse.

The door rattled again.

He put his hand on the knob, jerked it open.

Plain John, the lank young man of the previous evening, almost fell into Doctor Kurlov's arms. Plain John had nondescript brown hair, nondescript features. His eyes, though, were a vivid green and as glassy as ice.

Doctor Kurlov grabbed him by the collar, yanked him inside.

"Snap out of it, Plain John!"

The young man blinked; the glassy light faded from his green eyes. "Good Lord," he muttered in an acutely embarrassed voice; "what was I doing?"

"Come on in my office," Doctor Kurlov thrust his arm through the young man's. He glanced at the nurse. She had manoeuvred Miss Headly-Smith onto the sofa. "Soothe her," said the psychiatrist to the nurse; "and get her out of here. Then come on in with us."

Ann looked at Plain John with the ghost of a smile. "Do you think it's safe?"

The gaunt young man blushed furiously, too embarrassed to note the peculiar expression in Doctor Kurlov's black eyes as he held open the door.

"PLAIN JOHN." Doctor Kurlov sat down, put the tips of his fingers together, regarded the young man soberly over their peak. "W'd best discontinue the experiments. Frankly, I'm appalled at the turn they've taken!"

John Bancroft, M.D., dropped into a heavy leather chair. Two years ago when Doctor Kurlov had opened his office just three doors from him, Plain John had introduced himself to the psychiatrist as, "John Bancroft—no middle name—just plain John Bancroft." It had tickled the psychiatrist's fancy. The young doctor had been Plain John ever since.

Plain John cracked his bony knuckles, said in a disappointed voice: "But, Nick, I can feel it at the edge of consciousness—like a word on the tip of my tongue."

His green eyes lit with enthusiasm. He had bony features, strong, not unhandsome. His shoulders were slightly stooped, but it was the stoop associated with study. The bony structure was good. He added with a faint hesitancy:

"I had an experience last night. It makes me almost certain we're on the

right track, Nick. I don't know how to explain it otherwise."

"Yes?" Again that curious expression flickered in the depths of Kurlov's ageless black eyes.

Plain John told Doctor Kurlov the particulars of the dream.

"At least," he concluded with a wry expression; "I think it was a dream. It was so darn vivid that when the high priest started after me with a knife, I was panicked. I tried to wake myself up. You know that horrible sensation when you're sure that you're dreaming and you feel that if you can only yell, or the phone ring, or someone call you, you'll be able to break the spell; but. . . ."

Kurlov, his black eyes narrowed with interest, leaned across the desk, interrupted sharply:

"You say that you had no idea of your identity?"

Plain John pulled out a handkerchief, dabbed at his forehead which was beaded with sweat again.

"No. The black headed girl called me Baldrik, but I never did learn who I really was, or where I was supposed to be because the dream changed then. . . ."

"Go on."

"I don't know how to account for it, unless I was so anxious to be waked. The mind can play funny tricks." He hesitated. "I seemed to be outside the apartment walking along the sidewalk in my pajamas. Two cops in a patrol car grabbed me. I woke up then. I was still in my bed, but I was wringing wet with sweat."

Doctor Kurlov's brow was furrowed. He sat back regarding Plain John with a troubled frown.

"We could be stirring up something we can't stop. First this experience last night. . . ."

"There's one thing more," Plain John interrupted with a sheepish ex-

pression. "It's so darned impossible . . . well . . ." He bit his lip, then blurted out: "There was a large grass stain on the knee of my pajamas when I waked!"

Kurlov sat bolt upright.

"Sleep walking?"

"Maybe. But I never walked in my sleep in my life. The stain was fresh. It was just as if I'd fallen in the grass beside the sidewalk."

"I don't like it," Kurlov said after a moment. "I tell you, Plain John, we're getting into something over our depths. This afternoon for instance . . ."

THE young medic flushed, sank deeper into his chair.

"Ann's a fine long-legged wench," Kurlov went on dryly; "but an office building isn't the place for that sort of sport."

Bancroft cracked his knuckles in embarrassment. The reference to Ann Lang was more distressing than Kurlov guessed. Plain John had asked her once how she felt about marrying a doctor. The girl had laughed, explaining that a doctor would be her last choice. This had discouraged him so much that he had never been able to screw up enough courage to ask her outright.

He said: "I don't understand it. When I saw Ann in the corridor, something came over me. Instinctively, I . . ."

Kurlov shook his head. His face was broad with high cheek bones and a small sub nose, slavie. He looked fifty, ten years older than he actually was. His strange eyes, though, might have been regarding the world since the beginning. They had the ageless look of the Orientals. Someplace in Kurlov's ancestry, Plain John guessed, there was Mongol blood.

"Instinct can't account for it," Kur-

lov said, "The word's been abused. It loses its meaning unless it's applied strictly to reflex action."

"But that's exactly what happened! I tell you, Nick; the sight of Ann was like a spark to powder. I certainly didn't want to chase the girl like—like a satyr. It was reflex action."

"Conditioned reflex, possibly," the psychiatrist admitted hesitantly. "Plain John, we're probing regions of the cerebral cortex that have never been reached before. Man's mind is a peculiar instrument. It can cause warts, effect miraculous cures of purely physical disease, even destroy the normal lining of the stomach. Ulcers for instance. Frankly, I'm afraid."

There was a knock at the door.

"Come in."

Ann Lang came inside, said, "She's gone."

The young medic looked at her and blushed furiously. The nurse's blonde hair was back in place, her make-up again unmarred. She looked to John as if she had just stepped crisp and white from the laundry.

"What happened out in the corridor, Ann?" Kurlov motioned her to a seat.

She folded her arms, regarded the young doctor with more interest than she had ever shown before.

"I had just stepped off the elevator—I'd gone down to the lobby to get cigarettes—when Plain John, there, jumped out of his office at me." She wrinkled her nose. "It's a good thing I'm a husky girl."

Bancroft would have liked to crawl under the carpet.

"I repeat," Kurlov insisted with a worried frown; "we're stirring up a region of the brain that was never meant to be waked. If there are such things as racial memories . . ."

"Racial memories?" protested the nurse. "But that seems silly. Memory

can't be transmitted through heredity—can it?"

The two men regarded the young nurse thoughtfully. Finally Doctor Kurlov said, "Frankly I'm in complete accord with your opinion, Ann. I don't think it's possible!"

BANCROFT sat upright. "So far as our present knowledge extends that's right; but psychology is far from an exact science even yet." There was a great deal of conviction in his tone. "Certainly the inheritance of acquired characteristics is pretty well established. How could a new species pass on its particular variation except through heredity?"

"Yes. But memory . . ." began Ann.

The hesitancy had dropped from the young medic like a cloak as he sprang to the defense of his theory. He said: "The cerebral cortex of the brain, as you know, is composed of millions of nerve cells, neurones. They're changed, Ann, actually changed by what occurs to them; changed by memory and perception and experience. The change in the psycho-chemical relation of the cells could be passed on through heredity."

He paused, blushed again, added doggedly, "Our—er—accident this afternoon. Experiences of childhood, even when they've been forgotten, do influence our later behavior . . ."

"Why Plain John! You mean that you used to chase little girls when you were a kid?"

"Good Lord, no!" he said with such vehemence that both Kurlov and the nurse burst into laughter. "I meant to illustrate how Nick's probing has uncovered experiences that have lain dormant in the human brain since prehistory."

Kurlov asked, "Then you wish to

continue with the experiments, John?"

He nodded vigorously. "I have a feeling. It's hard to define. Like a veil has been dropped before my memory. I can catch vague glimmerings of movement behind the veil. Shadow play. It's the feeling a victim of amnesia must experience."

"There's a mental block there," the Russian agreed somberly. "It exists in all of us. But Plain John, has it occurred to you that the block might be there because our minds couldn't withstand the shock of such a cascade of memories? Perhaps it's what the Greeks meant to see Pan. No one could see Pan and retain his sanity!"

"You're imagining trouble, Nick, like the sword in the fairy tale. It's only amnesia. Racial amnesia. I don't understand your besitancy, Nick. It was you who got me interested in your racial memory theory in the first place."

Doctor Kurlov threw up his hands in a gesture of defeat. "I'm as eager as you to lift the veil. But if anything happens I'll be responsible." He turned to the nurse. "Are there any more appointments?"

"No. Miss Headly-Smith was the last one."

"Have you your note book?"

She nodded, wide-eyed.

"All right. We'll try again!"

**K**URLOV pulled himself reluctantly to his feet, went in silence to the windows, pulled the blinds. The office was plunged in gloom. From a cabinet he withdrew a device made up of small mirrors rotating in opposite directions, set it on his desk, switched on a ray of light.

John Bancroft could feel a strange excitement take possession of him as the psychiatrist set the mirrors to revolving. The ray of light played upon them in such a fashion that the mirrors

alternately flashed and darkened. They had done this many times before, but never had the sense of expectation been so impelling. His eyelids began to droop.

"Look at the light," he heard Kurlov say in a quiet voice. "Relax. Make yourself comfortable, Plain John. Sleep."

He was aware of the girl, pencil poised above her note book.

"Look at the light. Don't try to think. Relax."

They had done this so many times before that the mirrors pulled his eyes like a magnet pulls iron. It was the only reality. It swam in the darkness like a luminescent jelly fish, receded, disappeared.

Kurlov's voice reached him from an immense distance. It was insisting, soothing. He had to remember something.

"Memory is there," urged the voice; "lying dormant; transmitted by the gens of the chromosomes from generation to generation. An impression left on a living neurone. As real memory as the memory of your own childhood."

The voice was farther away. It was still soothing, but it probed at the same time, became commanding, urging him to remember.

"When I count three," it insisted, "the veil will lift. You will remember. I am going to count three. It will all come back to you—the infinite memory of mankind. I am going to begin counting, and when I reach three, you will remember!"

"One. . ."

A pause. His mind was beset by shadows, shadows moving on a gigantic screen.

"Two . . ."

There was a definition to the shadows, he had never experienced before. He felt suddenly terrified as if he were trembling on the verge of an abyss. He

tried to draw back. He couldn't. The depths reached up for him, fastened on him, dragged him over the edge.

"Three!"

THE mists blanketing Bancroft's mind swirled and cleared. He opened his eyes, conscious of motion. He was running. He was pounding down a long corridor of gleaming translucent plastic, a rosy diffused light radiating from the depth of walls, ceiling and floor.

Ahead of him fled a screaming girl!

The girl's black hair streamed out behind her. She was all but naked, he perceived in shocked disbelief, her tunic hiked clear of copper-brown, flashing legs.

Bancroft made a horrified effort to stop, found that he had nothing to do with it. He ran without volition of his own.

His brain fumbled with the enigma. One moment he had been in Kurlov's office. The next he was chasing a brown-skinned girl down an endless corridor; and he couldn't stop. He was in the position of a man astride a runaway horse.

Bancroft saw his hand snap out, close in the girl's black hair. She screamed in fright as he hauled her up short.

Someone shouted, "Baldrik!" behind him.

He spun around, but he didn't release the girl's hair.

He saw a tall man, lean and wolfish, loping after him down the corridor. The man was as fair as the girl was brown. He was wearing helmet and breast plate of the same shimmering translucent material as the walls. His hips, though, were sheathed in metal mesh shorts, his legs bare. A two handed broadsword, over six feet from hilt to point, was slung across his back,

the pommel rising like a cross above his left shoulder.

Bancroft heard himself growl: "What d'you want, Croc?" in that strange yet comprehensible tongue.

Croc said, "The high-born Ad-Ami sent for you." He eyed the black headed girl, added dryly: "You better not let the Adona catch you roughing her slaves."

"The wench asked for it." He released her though, gave her a familiar slap like a man turning a horse loose to graze. "Run along Myrrha."

She obediently started off down the passage.

"Come on," urged the fair, wolfish Croc.

They fell in shoulder to shoulder, walking back the way they had just come.

Plain John Bancroft's mind reeled in confusion. He was garbed, he recognized, the same as Croc from helmet to broadsword. In the center of both their breast plates was a flaming red sword like a heraldic emblem.

He heard himself ask: "What does the high-born Ad-Ami want?"

He heard it with his mind as well as his ears!

"I don't know." Croc shook his head. "He's worried. If I didn't know Ad-Ami better, I'd say he was terrified."

He was aware of a foreign thought: "The Blacks!" He didn't say it aloud; he thought it. It was accompanied by a definite feeling of alarm, the strong sense of imminent disaster!

His personality must be fusing with the character of this stranger, this Baldrik. Their egos, he realized, were slowly approaching until in the end only one sharply defined personality would remain. I was like the double figures of an out-of-focus picture. The figures slid together as the lens was



adjusted.

He and Croc reached the end of the corridor, paused. A section of the wall slid aside. They stepped within a mirror paneled lift.

An electric eye arrangement, plain John surmised. He was not surprised. He had expected the lift. More and more of Baldrik's thoughts were tingling on Plain John's mind.

In a way, he suspected, he would always play the passive role of spectator, but a spectator who is emotionally, mentally, physically in absolute rapport with the actor. He was beginning to think of himself as Baldrik.

Croc pressed a button beside the door. The lift shot upward.

PLAIN JOHN studied himself curiously in the mirror-paneled sides of the cage. He was not quite so tall as Croc, but broader, heavier. His eyes, he saw, were no longer green, but as yellow as topaz, set a trifle oblique like the eyes of a cat. His mouth was wide, thin lippled, his nose high arched. It was a trifle large, he was forced to concede, but it was a bold, hooked nose—a distinctive nose. Plain John had an idea it led its possessor into a good deal of trouble.

Croc said abruptly, "The priests have issued a new proclamation."

Alarm swept through his mind again.

"What is it this time?"

"The same thing. Water. One bucket a day per person. The spring's drying up. There's no doubt of it any more."

Bancroft heard himself reply in a bitter tone: "The air's been growing steadily worse. Of course, the priests reclaim most of it. But it's not the air we breathed a year ago. Now it's the water." He looked at Croc somberly. "The Planet's dying. That's the truth; and the priests don't dare admit it!"

An expression of alarm passed across Croc's gaunt features. "Don't say that," he warned in a startled, worried voice. "That's blasphemy! If the priests get wind of it, they'll turn you outside!"

The lift stopped. The doors automatically slid back. They stepped out into a vaulted ball. Walls, floor and ceiling, Plain John saw, were of the same translucent plastic. There were no visible seams or joints. The entire structure appeared to have been poured into a gigantic mould.

Slaves, brown-skinned, distinguished further by their brief yellow tunics, thronged this upper level. He recognized the free-born swordsmen lounging in groups. All of them bore the flaming emblematic blade on their breastplates.

"It must be nearing time to change the guards."

His identification with Baldrik, he realized suddenly, was almost complete. He felt with Baldrik's nerves, saw with his eyes, heard through his ears. He was even absorbing Baldrik's thought processes.

They passed from the hall into a guardroom, pushed their way through the clustering swordsmen. A grinning giant of a guard blocked their path.

"I've been looking for you Baldrik. You too, Croc." He lowered his voice. "Myrrba said the Adona . . ."

"Šbut up!" said Baldrik. "Not here! Not now!"

A vivid image of the black-headed serving wench whom he'd been chasing in the lower levels flashed in his mind followed by a chaotic vision of a cold, pale girl whom he knew to be the Adona, hereditary ruler of Azlanutia. Other pictures were present also, but too fragmentary to recognize.

He thought, "Damn that girl!" about the black haired slave wench, Myrrha.

"What did she mean talking to Vuotan. The giant didn't love their masters, but Myrrha talked too much. She'd give them all away!"

He was frightened and exasperated.

If the high-born, the ruling caste, suspected the existence of the secret Cult of Conquerors they would all be hunted out like rats.

GRADUALLY, almost imperceptibly, Plain John was beginning to understand the drift of events. It was like coming into a picture in the middle. Baldrik, this alter ego of his whose body he seemed to be occupying, must be mixed up with a subversive underground organization of some kind.

He turned to Vuotan, asking: "The high-born Ad-Ami sent for me. You don't know what he wants?"

The giant shook his head. "I don't know. Unless . . ." he paused.

"Unless what?"

"There's a whisper running through the city. They say the sacred tree is dying!"

Bancroft experienced a wave of superstitious dread.

The tree was dying! The last tree on the planet. It grew on the brink of the spring tended by a betaerae of priestesses. The oldest living thing in Azlanutis. Its gnarled black branches and sprays of green leaves almost reached the curved dome of plastic which hermetically sealed in the entire city.

It had been a seedling when Azlanutis was founded seven thousand years ago. The last of their race, driven into the receding sea bottoms, harried across a world by thirst and starvation, gasping for breath in the rarified atmosphere of a dying planet, had found the sapling on the bank of a river hursting from some subterranean source. The tree had been a hope and a promise to

the remnants, the raggle-tag ends of humanity on the dying world. A prophesy had grown up with the tree:

"As the tree flourishes; so will Azlanutis. When the tree dies; so will the city!"

He said gruffly: "The tree's dying of old age. That's all. The prophesy is absurd."

The same expression of superstitious dread furrowed both Vuotan's and Croc's features. Vuotan said: "By the God in the Machine! Don't say that, Baldrik! That's blasphemous! The priests'll turn you outside!"

A panel at the opposite end of the guardroom slid suddenly aside.

Ad-Ami, the high-born captain of the guardsmen, appeared in the entrance. He was a wrinkled old man, clad like a peacock in gaudy silks and laces. A yellow wig hung slightly askew on his bald pate. His cheeks were roughed, his eyebrows stenciled, lips painted.

"Has Baldrik come yet?" the faded dandy called petulantly.

"Ad-Ami," exclaimed Croc in a whisper.

Baldrik separated himself from them, advanced through the brawny swordsmen. "Here, O High-Born."

Ad-Ami saw him, turned on his heel.

Baldrik followed the noble into his fantastically luxurious office. The translucent walls had been colored in depth, giving a startling three dimensional quality to the murals running around the chamber. The feel of action, of rounded reality, was so powerful that he almost expected to see the hacchanalian figures spring out of the wall.

His sandal-shod feet sank into a deep pile carpet of a colorful, decadently figured plastic fibre. The furnishings were almost effeminate: soft lounges, intricately carved cabinets, curiously

wrought chairs and desk.

"What kept you?" Ad-Ami grumbled, when Baldrik had closed the door. "Wenching again?"

"I came, O High-Born, so soon as I was given your message."

"Humph!" In spite of paint and dye the decayed gallant's dehaucheries were written plain on his face. He moved behind his desk, asked: "Can you read?"

Baldrik nodded in surprise.

"Disgusting practice," Ad-Ami informed him; "fit only for priests and slaves. Though it's fortunate, I suppose, that you've acquired it."

HE SNAPPED the switch on an instrument resembling a Victorian writing box. Baldrik recognized it for an inter-communicating televisior. The screen glowed, but Baldrik was unable to make out the figures building in its depths.

He wondered at Ad-Ami's inquiring to his ability to read. The high-horn, he knew, were notoriously ignorant. For that matter the swordsmen were as indifferent to any learning other than skill with their terrible two handed claymores. Only the priests and slaves could read.

"This is Ad-Ami, O Adona," the high-horn spoke into the televisior; "I have Baldrik here."

"Can he read?"

Baldrik recognized the cold tones of the hereditary ruler issuing from the audio.

"Yes, O Adona."

"Fetch him here at once."

Ad-Ami switched off the televisior, looked up at Baldrik. "You heard the command of the Adona?"

Baldrik nodded.

The old gallant came stiffly from behind his desk, the corsets pinching his waist, led the way to the right wall. A

panel slid up into the ceiling disclosing a private lift.

The elevator bore them swiftly upward. They stepped out into a narrow corridor, the walls inset with murals so vividly real that they seemed to be walking through a gauntlet of naked dancing nymphs frozen in action.

The air, up here near the roof of the dome which shielded the city, was fresher, purer than in the lower levels. Bancroft-Baldrik sniffed. It was perfumed to hide the taint. It smelled delicately of fresh green growing things, of honeysuckle and dew-drenched flowers.

Two guards, broadswords drawn, blocked their progress at the entrance of the Adona's quarters. They recognized Ad-Ami, lowered the points of their swords.

Baldrik accompanied the high-horn Captain of the Guards into the reception hall, a vast arched chamber of a luxury that passed all description. He saw the major-domo, a slave in a yellow tunic, jump from behind a desk and approach them with the cringing servility of the ingrained lackey.

"Where is the Adona?" Ad-Ami snapped.

"The halcony, O High-Born."

Ad-Ami rushed past the slave. They passed on through chambers overburdened with soft draperies and divans, elegant tables and cushions. The motif of the three dimensional murals ranged all the way from representation of wild orgiastic dances to the precise ceremonies of the priests. Not a spot was undefiled. It never failed to offend Baldrik's sensibilities, reared as he had been in the stark simplicity of the swordsmen's quarters.

AT LENGTH, they came out on a balcony so close to the dome that by leaping upward Baldrik could have



A man lay writhing in pain  
on the floor at Adona's feet

touched the thick transparent rind of the city's roof.

Below him stretched Azlanutis, its towers and causeways like a fairy tale. It was the same city he had seen in his dream, the previous night, but viewed from a slightly different angle. He even recognized the strange black temple of the "God in the Machine."

Baldrik pulled his eyes from the scene below. Ad-Ami had paused, waiting for him impatiently. He saw a man and a girl near the fluted, scalloped rail.

The girl was sitting bolt upright on a low divan. She was blonde almost to the point of colorlessness. Her features were as cold, as emotionless as if they'd been delicately chiseled out of ice. The young Adona looked as out of keeping with her surroundings as a virgin in a bawdy house.

"This is Baldrik of the Guards, O Adona," said the high-born. "I've fetched him as you commanded."

The Adona's eyes passed over Baldrik's stalwart figure, a flicker of recognition in their chill blue depths.

Baldrik saw it, but he gave no indication. He had been assigned many times to the personal guard of the Adona. Her disposition he knew from observation to be the direct antithesis of her glacial appearance. The Adona always had an eye for a man's figure be he slave, swordsman, priest or noble.

Her companion, whom Baldrik had already recognized as Ta-uz, the Adona's uncle, said, "Come here," in a sharp voice. "Look at this!"

There was a low table between Baldrik and the girl. He circled it, halted in consternation.

A man lay writhing in pain on the floor at the Adona's feet. Where the emblematic red sword should have been on his breast plate, there was instead the figure of a black goat!

PLAIN JOHN was conscious of his alter ego starting with surprise. Baldrik had recognized the man on the floor as a trusted fellow member of the secret Cult of Conquerors. But as he raised his eyes to the Adona, his features were controlled.

"A Black? How did he get into the palace?"

She regarded him coolly, said: "You're wrong, free-born. He's no Black. He's a spy we sent into the priesthood."

An expression of amazement swept across Baldrik's hawk-nosed, cold eyed features. His lips thinned. During their novitiate the young priestlings served in the Blacks, the militant organization which defended the priesthood as the Swords defended the high-born. He asked: "Who is he?"

"A Sword," replied the Adona.

"One of us? A Red? Then what's happened to him?"

"Poison!"

The guardsman arched his back spasmodically. He didn't appear to be suffering. His eyes were open but they were glazed.

"It was not the priests who penetrated his disguise, though," the Adona's uncle explained dryly. "But the savants of a strange cult of heretics. He was supposed to be a priest and he couldn't read. They became suspicious."

Baldrik wondered wildly how much the spy had revealed before the poison silenced his tongue. Had he been betrayed? Had they fetched him to inform on the cult? He began to sweat.

"You can read, free-born?" asked the Adona.

Baldrik nodded.

"Then you are to take his place."

Baldrik gaped at her blankly, then he felt giddy with relief as he realized the significance of the Adona's words.

They didn't know he was a member of the cult. They were sending him to spy on it. He felt a grim amusement.

The four great castes, noble, priest, sword and slave, were hereditary. A man born a slave died a slave. Even marriage between the classes was strictly forbidden. Baldrik's own father and mother had been turned outside to die of suffocation for violating the code.

His father had been a Sword, his mother a member of the Priest caste. But before their secret was discovered, Baldrik's mother had taught him to read and to hate the high-born. Baldrik had been ripe for sedition when Myrrha, the black haired slave girl in the Adona's retinue, had first hinted that there was a group working secretly to escape the tyranny of the high-born.

He realized they were watching him, expectantly asked: "I am to enter the ranks of the Blacks as a Novitiate Priestling? How?"

The Adona relaxed, laughed coolly. She pushed back a wisp of pale blonde hair the color and texture of spun glass, patted the divan by her side.

"Sit bere, free-born."

**T**A-UZ, her uncle, frowned. So did Ad-Ami. Baldrik sat down on the yielding couch with distaste. He would rather have squatted on the floor or perched on the low table. The soft clinging touch of cushions irritated him.

Ta-uz, the uncle, said, "Your record, Baldrik, describes you as possessed of moderate wit. Also that you can read."

Baldrik narrowed his yellow eyes. The castes fraternized freely, but he knew little of the duties of a Novitiate Priestling beyond the fact that they were enrolled in schools, that for a period of ten years they were required to study the mystical scientific dogmas,

at the end of which training they became full-fledged priests, and no longer served as warrior priestlings.

"How am I to insinuate myself into the Blacks?" he repeated.

The uncle put his fingers together in a gesture highly reminiscent of Doctor Kurolov. His eyes beneath craggy brows were the hereditary milk blue of the Adona's. His sandy hair had been skillfully dressed and pomaded. His tightly corseted figure with rich blue blouse, ruffled collar and kilted skirt presented a striking contrast with the Adona's simplicity of dress.

His niece, the Adona, affected only a brief pleated tunic of pure white, more revealing than otherwise.

Ta-uz said: "We've forged orders supposedly transferring you from the Temple of Physics to the School of the Astronomers," and handed Baldrik a paper. "The priest in charge of the novitiates won't be surprised when you present yourself as a candidate."

"Yes." Baldrik folded the paper, stuffed it in his wallet. "And suppose he checks back with the Temple of Physics, O High-born?" He regarded the dying man on the floor without enthusiasm.

"He won't. There must be ten thousand novitiate priestlings in Azlanutis. They don't check into the antecedents of each of them whenever they change schools."

The imposition, Baldrik reflected, had a fair chance of success. Gradually a realization of the stratified society of Azlanutis was unfolding in Plain Jobn's mind. The high-born were the hereditary rulers, a parasitical class. But so long as the free-born Swords remained loyal they were apt to stay on top.

The priesthood, who served the machines, formed the third great class; while beneath them all were the slaves.

Ta-uz, the uncle, interrupted his reflections. "It was among the astronomers that our man first heard of this heretical cult. He was approached by a young priestling. When he signified interest, the priestling introduced him into the headquarters of this sect below the city."

"Is it composed altogether of the priesthood?"

"No. But from Sword and Slave, Noble and Priest alike. They call themselves the Cult of Conquerors and plan to colonize the greater moon, which in their fanaticism they believe to be a world like Ma'ah and not the abode of My Lord, the God of the Machine."

The uncle paused.

Baldrik, who was thinking fast, asked: "Then why should I be sent among the priesthood?"

"Because our only contact has been among the astronomers."

"But didn't he reveal any names?"

The uncle shook his head. "The poison took hold before he was able to complete his report."

A GREAT relief descended on Baldrik's mind. But the uncle's next words threw him immediately back into a state of nervousness.

"We have men searching the underground for their headquarters," the uncle said. "In the meantime, you are to report tomorrow to the astronomers. Express guardedly, of course, certain doubts concerning the Sacred Books of Science. We are hoping that the same priestling will contact you."

Baldrik nodded, deciding that he must contact Myrrha and send her to warn the Savants. There was to be a meeting tonight, but the Savants should know that they'd been betrayed as soon as possible.

"Look!" the Adona interrupted and

coolly nudged the body at her feet with her toe. "He's dead!"

Ta-uz and Ad-Ami glanced down. Baldrik felt the girl's cold hand slip into his own, press his fingers shut about a slender bit of metal. She gave him a pleading glance, said in a significant voice: "I'll be praying for your safety tonight, free-born"—there was the slightest hesitation—"at the hour of the greater moon!"

Baldrik concealed his astonishment, nodded almost imperceptibly. The bit of metal which the young Adona, the hereditary ruler of Azlanutis, had slipped into his hand, was a key!

The Hall of the Conquerors lay deep beneath the city, unsuspected by the teeming millions on the surface. In ages past it had been hewn from the living rock and an austere air like a monastery clung to its echoing vastness.

Baldrik in a red hood which concealed his features, sat cross legged on the stone floor.

All about him were others, hooded as well. Noble and Slave, Sword and Priest, they sat cross legged facing an empty dias at the head of the hall—waiting. Over two hundred men and women were gathered there. Little whispers of conversation rose wraith-like from the groups.

Baldrik fidgeted, wondering what kept the Savants. He didn't know whether Myrrha had succeeded in contacting them or not. He glanced around, thought he recognized the slave girl midway in the audience.

With a sigh of relief, he saw three men and a woman file onto the dais from a door at the side of the hall. The whispers dried up. The hall was still as death.

The four figures took their places in a semi-circle facing the audience. They

all wore sandals and brief white smocks. Two of the men were old, and one was young. The woman was ageless.

The Savants! Plain John catching Baldrik's thoughts, felt a quickening of his pulse.

The young man advanced to the very edge of the dais. He had a thin ascetic face. His intense brown eyes flamed with the inner fire of fanaticism.

"In the beginning," he said in a low voice which scarcely reached Baldrik; "the rivers overflowed with water and spilled into the seas. The air was sweet and thick. Trees and all manner of vegetation flourished, and there were beasts and fowls in the forests and on the plains, and the waters abounded with swimming things. The cities of man dotted the world beyond count. And man was not content."

THE spell of the strange young Savant's voice swept through the gathering like a wind.

"But man in his arrogance and pride gave no thought to my lord, the God in the Machine.

"Then my lord was wroth with man and he sent a curse upon Ma'ah.

"The waters began to dry up. The air dissipated into the void. First the birds and the beasts succumbed; then the trees and the plants, yea, even the insects died. And the cities of man were vast tombs, because without air and water no manner of life could survive."

His voice, which had gradually risen until it rang through the hall, fell silent. Plain John found himself gripped in the universal fascination.

"This is the tale," the young Savant cried suddenly; "that the priests would have you believe is a fable cloaking a moral. But I tell you it is fact!"

A sigh passed across the audience.

The man, who had held himself rigid heretofore, slowly brought up his fist, said in a changed voice:

"The planet is dying!"

"The sacred books of science are not pretty allegories; they are hard cold facts.

"The greater moon is not paradise, but another world infinitely larger, infinitely richer than our tiny planet.

"The priesthood serve the machines, but they have forgotten why the machines run. They have perverted the books of science, through their ignorance and stupidity.

"But the flame of truth is not out. Here in the subterranean vaults of Azlanutis a small party of us have kept it lit through the ages. We have sought the key to travel across the void while the last of man struggled in blind superstitious worship of science, ignorant of its true meaning. And we have found it. Yea, by the lord of the machine, we have found it."

He paused, while his words echoed like living things in the minds of those present. When he went on it was in a different voice.

"Our time grows short. You can hear the death rattle of our world. And so we have gathered you from all the inhabitants, from Slave and Sword, Priest and Noble alike, from the last of our once mighty race to cross the void and colonize the greater moon so that our race might not perish and our science and culture be pre . . ."

His words broke off abruptly.

Baldrik heard a whisper overhead. Before his horrified eye, a spear transfixing the speaker's throat. He fell backward onto the dais.

Baldrik sprang to his feet, clearing the six-foot broadsword from its scabbard as he wheeled around.

Even as he did so, another spear transfixing his neighbor's belly. The



man fell with a scream, hit the stone, doubled in a knot and clutching the shaft with both hands.

At the rear of the hall, Baldrik saw a horde of swordsmen pouring through the main entrance.

They had been discovered!

THE attackers hurled their javelins, then sprang to close quarters, their terrible two handed claymores slicing through the surprised spectators like the blades of a mowing machine.

In an instant, the entire hall was in pandemonium. Like frightened rabbits, the spectators stampeded for the dais and the rear exit.

Baldrik was likely to be trampled to death under their crazed feet. He caught a glimpse of the two old Savants and the ageless woman on the dais, holding aloof. In vain, Baldrik shouted at the swordsmen and nobles remaining alive to stand together. Then he turned and battered his way to the dais.

Men and women tore at each other at the rear exit in their panic to escape the butchers. Baldrik lay about lustily with the flat of his sword, shouting at the men to turn. He succeeded in rallying a dozen or so armed men. They faced the onslaught of the swordsmen, who were among them by this time, cutting them down like cattle.

The unexpected resistance temporarily halted the attackers.

Baldrik's own weapon sliced through the head and shoulders of one of the swordsmen. He yanked it free, swung again and again until his shoulders ached and the footing was slippery with spilled blood. The air was rent with the clang of steel on steel and the terrified screaming of the women still tearing at each other to escape through the passage.

A score more of guards flooded into the hall.

They couldn't withstand the weight of numbers much longer, even from the advantage of the raised dais. Baldrik spared a glance behind himself, saw that the two remaining Savants and the ageless woman had succeeded in restoring a semblance of order. The last of the women and unarmed men were disappearing into the tunnel.

"Get going!" Baldrik shouted at the Savants who were hesitating at the mouth of the exit. Then as they too vanished, he gave the word to fall back.

Baldrik was the last to enter the passage. His foot slipped in the blood underfoot. His opponent, a huge red haired swordsman, slashed at him with his six-foot blade. A hand grasped Baldrik's collar, yanked him backwards into the lightless tunnel.

"Back! Get back!"

Baldrik recognized one of the Savants. He scrambled to his feet, ran back up the tunnel on the old man's heels.

The attackers, he realized, had hesitated at the tunnel's mouth. They weren't eager to plunge from the lighted hall into the narrow black passage where they would be an easy prey silhouetted against the light.

Baldrik had raced scarcely fifty yards when there was a terrific explosion in the hall behind him. He was hurled forward on his face. The roar and grind of an avalanche of stone smote his ear drums. Rock dust stung him.

A blackness so thick it was palpable encased him.

Baldrik staggered to his feet. The whimpers of people abandoning themselves to pure terror rose from the darkness ahead, but from the direction of the hall there was only a dead silence.

The Savants, he realized, had blown up the chamber of the Conquerors. Tons of rock had caved in on the heads

of their attackers. That way to the surface was blocked off forever.

A light sprang on in the dark, played about the tunnel, turning the rock dust into shimmering particles of fire as it settled to the floor.

By its reflection, Baldrik saw that the light was held in the hands of the elder Savant, a man so withered and sere with age that he looked brittle.

"My son," he said in an agitated voice and laying a hand on Baldrik's arm; "you have been the means of preserving all of us this day."

But Baldrik's amber eyes through the slits in his mask were somber. He shook off the Savant's hand, began to curse.

"Save your strength," said the old man dryly. "They're hurried under the rock. There's no need to curse them."

He urged Baldrik along the tunnel to where the ageless woman and the other Savant had collected the pitifully few survivors.

Without a word he led off up the tunnel, the beam of his light reflecting from the rough hewn walls and floor.

**A**FTER an interminable trek through the black tunnel, the remnants of the would-be colonists reached a large lighted hall fitted out with bunks and tables.

Baldrik flung himself on a bench. For the first time he was able to perceive the extent of the disaster. Of the two hundred who had originally been present, a scant twenty or thirty remained most of whom, he realized with surprise, were young girls.

The Savants had chosen young virile stock to attempt the colonization of another world.

Now, though, they were a bedraggled lot. The young women, their tunics torn, their hair streaming, their faces and arms scratched, huddled together

about the long table. He recognized Myrrha. The black headed girl, he saw, had parted with every stitch except a single sandal. She grinned at him shamelessly.

Baldrik grinned back. The girl had enough spunk for the lot, and he wondered what it was she had told Vuotan about the Adona, made a mental note to ask her at the first opportunity.

The two old Savants sank on the bench beside him. The elder said: "This has been a terrible set-back, but praise the strength of your arm, my son, there are enough of us left to go on."

"What are we going to do with these people?" With a swing of his arm Baldrik indicated the ragged survivors. "They can't return to the surface. Not like that. They'd be spotted at once. And there aren't enough left to colonize a world."

"No. No. They must stay below while we recruit new colonists." The aged Savant turned his eyes on Baldrik. "We have food and the means of preparing it, food for thousands if necessary." He paused, adding, "We lost a great deal today, but we've found a replacement for San-far. We are old, Laritan and I. We need your youth and strength and courage. On you, my son, will fall the task of gaining us new recruits."

The ageless woman, accompanied by two young boys, brought food and set it before the frightened colonists.

"I am Angor, my son," the Savant went on. "Laritan and I, the woman Ecrica, and the two young neophytes are all that are left. We will keep the colonists hidden here in the ruins until we have gathered enough recruits to try again. Eat, my son. You'll need your strength."

While Baldrik and the other survivors ate, Laritan and Angor and the

woman spoke in low voices among themselves.

At length Angor, turned to Baldrik, said: "It is agreed, that the mantle of San-far descend on your shoulders, my son."

San-far, Baldrik knew, was the young fanatic who had been slain in the Hall. He frowned, not quite understanding what the Savant was driving at.

"Come!"

Baldrik rose, followed Angor into a small chamber off the main hall. Laritan and the woman, he saw, remained behind with the survivors. Then Angor closed the door, motioned him to a seat, saying:

"Since the beginning of the great drouth, my son, Laritan, and I have been working on a means to escape this planet to the greater moon. We were respected scientists in those far gone days and helped to plan and build this city as a refuge until the secret of space travel could be discovered."

**B**ALDRIK'S eyes opened in disbelief. Azlanutis had been founded seven thousand years ago. He started to protest, but Angor held up his hand.

"Don't interrupt," he commanded. "Hear me out. Soon after the city was completed there was a revolution. The workers turned on the scientists. The city ran with our blood. They hunted us down like rats, and set themselves up as masters. They were the ancestors of the nobles, my son. They and their progeny are the high-born.

"A class of priests grew up from the men who served the machines which maintained the city. But as the machines were self-regulating, self-repairing, the workers degenerated into an ignorant superstitious caste who followed the directions written on each machine by rote. The working of the

machines they didn't understand. Their work became a ritual.

"Laritan and I were among a small party of scientists who escaped into the labyrinth below the city and there hid.

"In time we hoped that they would realize their error; and so we went ahead with our work to escape this dying world."

An expression of sadness lengthened the Savant's face.

"But in this, my son, we were doomed to disappointment. With the killing of the scientists, the ignorance of the populace grew worse. We were growing old and dying, and it began to look as if knowledge would depart with us from Ma'ah forever.

"Frantically we tried to discover some means of perpetuating ourselves. We were old, too old to bear children and expect to rear them and teach them. Besides, the caverns and tunnels were no place for children.

"Then Laritan, when we had given up hope, hit on the idea of perpetuating the ego. Only he and I were left. We captured a young lad of fifteen and began our experiment. He was a bright lad with a receptive mind, and we succeeded in implanting Laritan's memory and consciousness in the lad's brain, all the thought patterns that were distinctly Laritan's. So that when Laritan died a short time later, I had only to waken the boy's mind. All Laritan's memory, his very ego, was there and Laritan lived again in the lad.

"To talk to him was like talking to a voice from the grave.

"Laritan, before he died, did the same for me. After that, when our hodies began to fail, we secured young lads from the surface, and implanted our memory patterns in their brains. The neophytes you saw in the hall serving the food are our familiars. They possess our memories although they

have not yet been awakened.

"Our bodies, my son, have died many thousands of times; but our egos, everything that persuades a man of his identity, remains alive."

Baldrík was staring at the aged Savant in hypnotic fascination. Here was a man whose peculiar essence that was his personality had witnessed the march across the dead sea bottoms, had helped to build Azlanutls, had survived the revolution. He felt as if the realization was too big for him to grasp all at once, and asked in a suffocated voice:

"You didn't mention the woman, Ecríca, nor San-far. Who were they?"

"In time, my son, we realized that with only two of us, there was danger that we might both die simultaneously or be killed. Then there would be no one to awaken the minds of our familiars, the lads in whom we had implanted our egos. So we captured a boy and a girl and trained them, but did not implant our egos in their brains. They were independent. Then there would always be four of us, passing our egos on to new youths from generation to generation. These were San-far and Ecríca."

"Then you wish me to take Sanfar's place?" asked Baldrík in amazement.

THE Savant stroked his chin. "San-far was young. He had not yet trained his familiar. His death leaves no one. It will not be so simple as if San-far himself were implanting his own ego in your mind, but it can be done.

"It will be as if the brain of San-far were transferred into your skull, my son. While your own ego remains, it is submerged in that of San-far."

Baldrík realized he was sweating.

Plain John if he'd had a body at the moment would have sweated even more profusely. No more than Baldrík did

he have any desire to be submerged under another individual's ego, and a strange fear was gnawing at his consciousness that just this might result from the experiment occurring off someplace in Doctor Kurlov's office.

Yet under the compelling eyes of Angor, Baldrík's objections were weakening. Black eyes, ageless eyes, strangely reminiscent of Doctor Kurlov's eyes.

Plain John felt his alter ego reeling. He tried to withdraw his gaze from the Savant's blazing eyes, but he was held, paralyzed, feeling those terrible orbs, plunge into his brain like twin blades of steel.

He fell forward, his mind spinning, spinning into the troubled realms of the unconscious.

Plain John regained consciousness in Dr. Kurlov's office.

He stared groggily from Dr. Kurlov to the blue-eyed nurse. He shook his head to clear it. The foggiess remained.

Neither Kurlov nor Ann spoke, but continued to watch him silently, a strange expression, he realized, clouding their eyes. Eyes that were old when the pyramids were built. Eyes strangely out of character in the girl's young unlined face and Kurlov's pleasant bearded features.

He tried to shake off a sudden conviction that he was Baldrík. Memories that he knew weren't his rose in his mind. He felt his personality being drowned in the flood.

Still Kurlov or the girl never spoke.

Plain John pulled himself to his feet. He pointed an accusing finger at Kurlov.

"You! What have you done to me?"

"Quick!" said Kurlov, rounding the desk in a flash. "Something's gone wrong! Baldrík's personality is submerged. He's still Plain John!"

The doctor seized Plain John's coat collar, yanked it down over his shoulders, pinioning his arms helplessly against his side.

Ann Lang ran to a cabinet, flung it open. She snatched a bottle and a wad of cotton from a shelf, saturated the cotton.

Plain John struggled violently, but Kurlov, grunting, held onto him.

Then Ann flung her arm around his neck, clapped the saturated cotton over his mouth and nose.

He could smell the sweetish odors of chloroform, feel the girl clinging to him, her lithe body pressed against his. He tried to wrench away, to twist his head free of the cotton, but the weight of the girl in front and Kurlov holding his arms rigid in his coat sleeves defeated him.

He felt a numbing deadness creep over his mind. He sank down, down into blackness.

**PLAIN JOHN BANCROFT** awakened slowly. There was a dark brown taste in his mouth and his stomach had the queasy distressed feel of seasickness.

He sat up, swung his bare feet over the edge of his bed to the floor. With a start, he recalled the scene in Kurlov's office, looked around, realizing that he was in a strange room.

The room was large, airy with pale olive gray walls and a mauve carpet. There was his bed, a table, a dresser and two chairs, all of an ash blond wood. The light was slanting through curtained French windows onto the carpet and the foot of his bed.

Plain John stood up feeling his head whirl dizzily. He was wearing black silk pajamas with a gold monogrammed K over the breast pocket. The pajamas were too short in the legs and too tight across the chest. He saw no sign of

his clothes.

There were three doors, and he tried them rapidly in succession.

The first led into a tiled, black, green and gold bath. The second revealed a bare closet. The third was locked.

It probably led to the corridor, Plain John surmised. He turned to the dresser, yanked the drawers open one after the other. They were all empty.

Whoever had undressed him had carried off his clothes.

He went to the window, swept the curtains aside. Grim iron bars striped the window.

He gazed off through the bars at the well manicured grounds of a large estate. The hilliard cloth green of the lawns swept down through shrubbery and large trees to the teal green waters of a lake.

He saw a lemon colored patch of sand that was a tiny beach and three white figures stretched out sunning themselves. Beyond the lake, he could see the corner of a tremendous warehouse. His green eyes narrowed in surprise. He couldn't see all the building, but from the portion visible the strange structure must cover hundreds of acres!

As he watched, one of the figures, a girl, rose, drew on a white terry cloth robe and started towards the house.

The girl approached, passed under his window swinging a white rubber bathing cap and fluffing out her yellow hair.

Plain John saw that it was Ann Lang, Kurlov's nurse. Then she passed from sight around the corner of the house.

He left the window, sat down on the edge of his bed, felt for cigarettes.

He remembered that he was wearing someone else's pajamas and cursed feelingly.

He rubbed his palms against his temples trying to make sense out of what had happened to him.

He refused to accept the idea of a cult of alien intruders, from some other planet, who perpetuated themselves by transferring their egos. It was preposterous!

Besides Kurlov was an internationally famous psychologist who had been exiled from Germany by the late Nazi regime. His book, *The Subconscious in Relation to Behavior*, was a standard text.

PLAIN JOHN jumped to his feet, began to stride nervously back and forth across the room like a frightened leopard in a cage.

No matter how savagely he derided the idea; there was a whole new set of memory patterns in his brain!

His experience as Baldrik, swordsman of Azlanutis, was as real and vivid as if it had happened yesterday.

He stopped short in his pacing, forced himself to face an ugly possibility.

Was he crazy?

Were these the hallucinations of a diseased mind?

The click of the lock behind him brought Plain John back to the present with a start.

He wheeled around. The door swung slowly open, and he saw Ann Lang in a starched white uniform with a tray of food in her hands.

"I've brought your supper," she smiled, her blue eyes friendly. She came in, shut the door with her heel. Then she set the tray on the table beside the bed, calmly locked the door and dropped the key back in the pocket of her white uniform. "Do you feel like eating?"

"Where are my clothes? Where am I?"

The nurse laughed. "Sit down and eat. Your clothes are locked in a cupboard downstairs. This is Doctor Kur-

lov's sanitarium."

Plain John's eyes widened in alarm.

"I—I'm not . . ."

"No," said the girl; "you're not crazy."

He blew out his breath in relief. She might be lying to him but it was good to be reassured, anyway.

He sat down at the table. There was coffee and toast, scrambled eggs and Canadian bacon and Guava jelly.

He said: "Look here, Ann, what's this nonsense about the Conquerors. I can't get it out of my mind that you and Kurlov are—have been . . ."

"It's not nonsense." There was a faint look of pity in the girl's blue eyes. She sat down primly on the edge of the bed.

Plain John stopped chewing.

She said: "You're a descendant of Baldrik I. We've had to try to awaken his consciousness from the racial memory angle." She glanced at her wrist watch. "You'd better finish eating. I have to prepare you for Dr. Kurlov in a few minutes."

"Racial memory," he echoed. "Do you mean the fantastic hallucinations I've been experiencing have been latent in my brain all the time?"

She nodded.

"We've always implanted them before. But without Baldrik I or his memory records—he was killed in street fighting in Atlantis—we've had to find some individual who had inherited his memory patterns. We experimented on hundreds of subjects before we discovered you . . ."

"He must have been prolific," said Plain John dryly.

"For some reason," Ann wrinkled her nose; "you still aren't Baldrik. Your own ego remains in control of your body."

A seed of hope sprouted in Plain John's mind only to be blighted by her

next words.

"Finish your food. Dr. Kurlov is going to experiment again in a few moments. He thinks he can rouse Baldrik I's ego by a new process of electrical stimulation."

Plain John stared at her in horror.

HE LEAPED to his feet. He had one compelling thought: "Freedom!"

He said: "Give me that key!"

"Plain John!" Ann rose abruptly, backed to the door. Her hand disappeared in her pocket.

Plain John jumped across the room, seized her shoulders.

"Give me the key!"

He felt a sharp pain in his arm, glanced down. Ann Lang had buried a gleaming hypodermic needle in his arm.

Even as he looked, he felt the strength leave his legs. He lost control of his muscles, sank in panic to the floor.

THE elevator doors slid back. Ann Lang in a fresh white uniform, pushed a carriage into the corridor on which lay the inert figure of Plain John.

The young medic's eyes were open, unwinking, the light of consciousness swimming in their green depths. The hypodermic which the girl had administered had acted directly on the voluntary motor cells of his brain, leaving him fully conscious but paralyzed. He was naked except for a hospital gown and lay on his back staring upward at the ceiling.

Plain John was a badly frightened young man and he was mad.

The nurse wheeled him soundlessly down the corridor, pushed him through swinging doors into a laboratory. He caught sight of Dr. Kurlov in a white smock bending over a complex machine on a table.

Kurlov straightened, saying: "Put him on this table, Ann." Then to plain John: "I'm sorry to have to do this. There is a chance that the brain might snap under the shock. Insanity isn't a pleasant prospect to face, but we've no alternative."

Plain John said nothing because he couldn't, but his green eyes were eloquent.

"We're going to attempt to excite the racial memory cells into activity," Kurlov went on as Ann stripped the hospital gown from Plain John's lank frame. The doctor gave the nurse a hand bundling Plain John's limp body onto the operating table. "If the electro-psychochemical constituents of the cerebral cortex respond without undue shock, there is a possibility that the ego of Baldrik I will emerge dominant."

Plain John gazed at the white ceiling with helpless frustration. The psychiatrist sounded friendly, almost apologetic. He was carrying on his explanations as he worked with the air of a lecturer describing an operation to an interested student.

He said: "The stimulating force is primarily electric."

WIRES sprouted from the strange machine like ganglia, ended in cup shaped instruments which the doctor attached to Plain John's solar plexus and chest, his arms and legs, his temples and the base of his skull.

"It's possible that even if we arouse all of Baldrik I's memory patterns that you've inherited, his ego still will remain quiescent. In that case we'll have to destroy your own memory.

"I hope we don't have to try that, though. The operation has been successful only fifteen percent of the time." He turned to the girl. "The straps, Ann."

She silently buckled Plain John's

ankles and wrists to the table.

"Don't fight the pain," Kurlov moved to the machine. "It lasts only an instant. The shock is considerable less if you're relaxed."

He pressed a button.

Plain John felt an exquisite stab of livid fire searing at his brain like molten drops of iron. The room was swept instantly away.

Then his skull burst.

He watched the fragments of his brain exploding outward like a nova. With a curious sense of detachment, he realized they were continuing to expand, bursting chain like, forming suns and galaxies and universes. He thought, "the expanding universe!"

He fell out of his chair and bit his face with sobering force on the cold stone floor.

He scrambled to his feet, looked into the anxious wrinkled features of the old Savant, Angor.

He was back in Azlanutis.

"San-far, my son . . ." began Angor. They were still in the little room off the main chamber where the remnants of the colonists were listlessly sitting about the long table.

Baldrik shook his head groggily, gave the old Savant a penetrating glance.

"You're wrong, Angor. I'm not San-far; I'm still Baldrik." He grinned triumphantly.

The Savant frowned. "But I don't understand . . ."

Plain John realized that this must be the continuation of the episode which had culminated with the old Savant's attempt to implant his dead co-worker's ego in Baldrik's mind. Obviously Baldrik's ego had refused to be ousted.

A ray of hope illuminated Plain John's bodiless intelligence. He re-

laxed into the experience with an easy familiarity. It was almost like returning to old friends.

"No more do I," agreed Baldrik; "but I can't say I'm displeased. I've a partiality for being myself."

"But don't you remember . . ." Angor began.

"I remember a lot of things I'm sure never happened to me. But it's more as if the new memory had been tacked on, extending back into the past . . ." The swordsman gnawed his lip trying to find words. "As if I'd been born again and again and I'd just remembered those different lives. But I'm still Baldrik, praise the God in the Machine."

Angor, who had been leaning forward, his wrinkled face intent, relaxed.

"It's not complete. San-far is dead. I suppose it's impossible to transfer the spark of individuality by proxy."

"But I know what he knew."

"Yes. That is so." The Savant brightened. "You'll be able to take over his work, perhaps even more ably than San-far himself."

"What is to be done?"

Angor replied: "The ship is completed, ready to sail. We are thirty-seven in all: twenty-five women counting Ecrica, who is still young enough to bear children, and twelve men. But Laritan and I are nearing the end of our present bodies' life span. They'll be useless for breeding.

"Our paramount need is recruits."

**B**ALDRIK said thoughtfully, "I can count on possibly thirty or forty swordsmen being willing to join us if I can contact them without being caught. They should be able to bring friends. Say a hundred in all.

His amber eyes lit with grim humor.

"The women we can kidnap."

Angor looked doubtful.

Baldrik added as a clincher: "It will



not be so select a group as could be wished; but if we worked swiftly they could all be gathered here in twelve yahts.\*"

"Time is important," the old Savant agreed. "The guardsmen of the high-born may stumble across our retreat any moment."

"Then it's settled."

Angor nodded. He pulled himself to his feet, said: "Come, my son. Let me show you our quarters, then we'll give you direction on reaching the surface."

Baldrik followed the old man around the underground chambers of the cult.

The men and women, he saw, slept, ate, and worked together in the common room. Back of that lay storerooms and a gallery where food was prepared.

These passages, Baldrik realized, drawing on the recently acquired memory of San-far, were the tunnels of abandoned mines. The robot miners which the old ones had built still worked on mechanically repairing themselves as they hurrowed deeper after the precious metals. In consequence a network of tunnels made a labyrinth beneath the city.

When Baldrik and Angor returned to the common room a measure of hope had begun to replace the shocked distress of the colonists. Several of them had stretched out on the bunks and gone to sleep.

Myrrha, still sitting at the long table with half a dozen others, looked up at him, wriggled along the bench, saying "Sit here, Sour One. Laritan has been telling us that we are not to return to the surface." Her black eyes sparkled. She didn't seem at all unhappy about it. "Praise my lord, the God in the Machine, I'll never have to dress that blonde bussy again!"

The reference to the Adona reminded Baldrik of the girl ruler's key reposing in his wallet. A vague plan started to formulate in his mind. He dropped to the bench.

"What was it you told Vuotan about the Adona?"

Myrrha hesitated. "I was only sounding out Vuotan, trying to see how loyal he was. We still needed recruits. But the Adona did try to pump me about the cult."

"What did she ask?"

MYRRHA'S mouth set. "I was combing her hair, when she informed me she knew all about the Cult of Conquerors. She wanted me to bring her to the meeting in disguise."

"What did you say?"

The black beaded girl laughed.

"I told her that if she knew all about it, she knew more than I did because I'd never heard of it."

"Do you know the private entrance to the Adona's quarters?"

Myrrha regarded him suspiciously.

"Why?"

He grinned. "I have the key. It would be the very cream of the jest to carry off the queen of the high-born as a colonist for another world."

The slave girl drew back in surprise, then a look of glee passed across her face and she burst into laughter.

"I can show you the way, but not like this." She regarded her lack of attire with a frown. "We'd attract too much attention if I went tripping through the palace in only a sandal."

Baldrik recollected the storerooms, inquired of Angor if any yellow slave tunics were among the supplies.

There were, and other clothes as well. In a few minutes the colonists had exchanged their rags for whole garments. The knowledge that in six or seven yahts, if everything went as

\* Yaht—the Adonians' division of time equivalent to approximately three and a quarter hours Earth time.

scheduled, they would be leaving the doomed world for the unknown, infected the colonists with a feverish gaiety. Even Angor and Laritan, the aged Savants, were unable to repress their excitement.

As Myrrha, clothed now in a brief yellow tunic, and Baldrik started for the surface, Angor put his hands on their shoulders.

"Remember, Baldrik, my son, if anything should befall us here in the tunnels, the fate of our race will depend on you.

"You have the memory of San-far. Buried in your subconscious is the knowledge of the spaceship; where it is; how it works. Draw on that memory, my son. But in case Laritan or I are not able to be there, do not heedlessly try to fly the ship. We have prepared against it being discovered.

"It is powered by atomic disintegration. The least departure from the formula of acceleration will cause the atoms to touch off, everything they come in contact with, chain like, and blast the ship and its occupants into nothingness."

Baldrik nodded soberly, feeling a premonition of disaster dampen his ardor.

"But you'll be there, Angor. You and Laritan. It's foolish to brood about what may never happen."

"Who knows what the future holds." The old Savant shook his head. "I'm not forecasting disaster. I'm only trying to prepare for any eventuality.

"You have San-far's memory patterns, my son. The key to the accumulated knowledge we have garnered through the ages lies there." He tapped Baldrik's skull. "Don't hesitate to draw on it should it become necessary. That is all."

He turned abruptly back into the chamber.

BALDRİK and the slave girl, Myrrha, had gone scarcely a quarter of a mile through the labyrinth when the faint sound of screams reached them from the direction of the chamber. They regarded each other in consternation. Baldrik began to run back the way he had just come, Myrrha on his heels.

The cries grew louder; then they died out. There was silence.

Baldrik's heart was thudding against his ribs. A cold dread flowed through his veins. As he neared the cavern, he slowed down, went ahead cautiously.

Whatever had caused the disturbance was over. As he reached the storerooms he could hear the rumble of voices. He peered warily from behind a bale of goods into the chamber.

The swordsmen of the high-horn were clustering thick as flies about the bodies of the colonists.

He recognized the aged Savants and their familiars, their corpses hideously mutilated by the guardsmen's two handed blades. The ageless woman lay dead amid a heap of bodies that had been the colonists.

Dead! All dead!

Illy armed, the pitiful remnants of the massacre in the hall, men and women alike, had gone down without a struggle beneath the blades of the guardsmen.

Baldrik became conscious of Myrrha's fingers digging into his shoulder as she tried to draw him back.

Gradually the cold red haze of rage receded from his brain. He had been on the point of hurtling himself blindly into their midst, determined to cut down Ad-Ami, the high-born captain of the guard, whom he recognized among the swordsmen.

He allowed the girl to draw him back up the passage, followed her numbly, his mind refusing to grasp the extent

of the disaster which had befallen them.

Well out of earshot, the girl halted. "We're not lost yet," she said grimly.

He regarded the black headed slave wench with a savage expression in his amber eyes.

"There's only the two of us left!"

She put her hands on his arms, shook him with mingled exasperation and worry. Tears stood in her large black eyes.

"Remember Angor's words! You hold the key in your brain. You know where the spaceship is and how to operate it." She dabbed angrily at her eyes. "Maybe you don't mind taking orders from those big-born fops, but I wouldn't go back if I could. High-born!" She spat the words out. "They're no more high born than you or I!"

He continued to regard her silently, but there was a speculative gleam in his eyes. The girl seeing him waver, slipped into his arms, pressed her body flat against his. She held her piquant face up, her large eyes luminous.

"Suppose it is a million to one chance that we can't pull it off," she urged breathlessly. "Think of the stakes! A brand new world with air and water and growing things. Freedom, Baldrik!"

He was conscious of the feel of her firm young body.

"Think of it!" Myrrha raced on. "A wild free, pagan life under another sky. An exciting life!" She gave a low laugh. "I can make it exciting," she said and pulled Baldrik's head down, kissed him full on the mouth.

Baldrik, as soon as his rage had cooled enough to allow him to think, had realized that it was impossible to turn back now anyway. Besides he was as eager as Myrrha to see the Greater Moon for himself. But he was enjoying having the girl importune

him.

The disembodied ego Plain John, able to disassociate himself partially from Baldrik, realized that this ancestor of his was something of an opportunist and a cynic who demanded payment in advance. The young medic was shocked.

"The swordsmen will be scouring these tunnels for any colonists they've overlooked," Baldrik said to the girl; "we can't loiter here," and drew her deeper into the network of passages.

WHEN they emerged into the lowest level of the palace, Myrrha took the lead.

"You still want to get to the Adona's apartment?"

The long night had descended on the city but it was impossible to tell it in the depths of the palace.

He touched her arm.

"Not yet. The swordsmen first. Come with me."

They entered a lift, went up ten floors. The corridor, which they came out in, was deserted.

"They must have most of the guards scouring the tunnels beneath the city." He frowned, drifted swiftly, silently down the passage and entered a large square chamber. A very old man, naked except for shorts, sat behind a desk.

The old man's withered flesh hung on his big, once powerful bony frame like rags. He regarded the man and girl with bleary eyes, recognized Baldrik, nodded.

The swordsman allowed his breath to escape through his teeth, asking: "Are Croc and Vuotan in the harracks, little grandfather?"

The superannuated guardsman, reduced by age to checking the swordsmen's quarters, nodded indifferently.

Baldrik felt his hope rising. The

word wasn't out for him yet. Maybe his absence hadn't been noticed.

He urged Myrrha through the door into the corridor beyond the little grandfather's desk.

The passage led between apartments quartering the palace guards and their families. Baldrik, followed by Myrrha walking demurely one step in the rear, returned the greetings of women and children, but didn't stop for gossip.

He found Vuotan and Croc in the bachelor's quarters, drew them into a back room, shut the door.

The two swordsmen regarded the girl curiously; but tactfully refrained from asking questions.

These two men Baldrik knew he could trust. Without preliminaries, he launched into a hurried explanation of the cult and the chance to escape to the Greater Moon.

Their faces reflected surprise, fear, then gradually a dawning belief.

Croc interrupted: "The ship, you say the ship is built and ready to sail?" Baldrik nodded.

"We only need men and women to colonize the Greater Moon. You and Vuotan know who among us can be trusted. You can circulate among the Swords. Those you convince will know others. A hundred should be enough."

"But the women," protested Vuotan. "Where can we get the women?"

Again that quizzical expression of amusement flashed across Baldrik's amber-eyed, hook-nosed features.

"Kidnap them."

They regarded him in astonishment.

"Easy enough to say," Croc growled at length, "but what do we do with them after we kidnap them?"

"Do I have to tell you that?" Baldrik asked dryly.

Myrrha giggled, while Vuotan slapped his giant thigh and roared with laughter much to Croc's discomfort.

THE lean wolfish swordsman scowled, saying: "You know what I mean. Where do we hide them?"

"Take them to the ship," Baldrik wrinkled his forehead trying to prod the imposed memory patterns of San-far into activity. "There are secret tunnels leading from beneath the temple of the God in the Machine to all parts of the city like the spokes of a wheel. The hub is the temple."

The words came hesitantly as if each one was flashed from San-far's memory with an effort.

"The inner chamber, where even the priests are not allowed to set foot, houses the ship. The tunnels lead up through the floor of this inner chamber. It's the only way that it can be reached because Laritan and Angor, centuries ago when they started to build the ship, threw electrical screens across all the doors.

"The priests were killed by the electric shock whenever they tried to cross the thresholds and have come to believe it is the God in the Machine who strikes them dead for profaning the holy of holies."

He paused, wiped the sweat off his forehead with his hand.

"One of the tunnels runs underneath the palace. Descend to the lowest level with all the women you capture. Ten steps beyond the doors of the Adona's private lift there is a mural of a dancing nymph. Press the eyes of the nymph and the panel leading down into the tunnel will open."

Baldrik sighed with satisfaction, said in his normal voice: "As fast as you grab the women, take them through the tunnel, to the inner chamber of the temple of the God in the Machine. No one can reach you there except by the tunnels. Hide them there and wait for me."

"But where will you be?" Vuotan

protested.

Baldrik's grin lit his face again.

"I'm going to get the Adona."

BALDRIK and Myrrha stepped out of the Adona's private lift into a little antichamber. The girl silently pulled aside a gorgeous brocaded wall hanging, revealing a dark tunnel between the plastic walls.

"This way," she said in a whisper.

The hangings dropped behind them, trembled an instant and then were still.

Baldrik felt his way through the darkness, the girl's hand on his arm. They had succeeded in reaching the top floor of the palace without being observed. He tried to suppress his rising sense of triumph lest overconfidence trip him up.

He stopped.

"Here's a door."

"Your key," Myrrha whispered.

He extracted the sliver of metal from his wallet, felt for and found the keyhole. There was a faint click, then moonlight flooded through the opening as the door slid back.

But such moonlight.

Plain John seeing through Baldrik's eyes, had never dreamed of such moonlight in his life.

The roof of the Adona's sleeping chamber was the clear transparent dome of the city itself.

A tremendous disc, luminous, faintly green like pale jade, hung in the sky, so huge it seemed about to crush the city. Baldrik saw the Adona lying asleep like a doll on the immense expanse of the bed.

A sheet of some gauzy material was drawn up over her carelessly, her pale blonde hair spread out on her pillow like strands of the moonlight.

Baldrik and Myrrha advanced cautiously into the room. The floor was carpeted with a shaggy white rug. The

young Adona's tunic and sandals lay on the floor where she had stepped out of them. A pale green gown had been flung across the foot of the bed.

Suddenly the Adona sat bolt upright, clutching the gauzy sheet to her breasts. Without a word, she reached cat-like for a button set in the head of her bed.

Myrrha gave a warning cry, but Baldrik had already leaped for the dials. He caught the girl's hand only an inch from the button.

"No you don't."

He reached his free hand behind the bed, tore loose the wires.

"I'd given up expecting you," said the Adona with a cool laugh. She settled back against the pillows, pulled the sheet up to her white throat. "I didn't think you'd bring a guest." She nodded at the black haired Myrrha.

Baldrik didn't reply, but tossed her tunic to her.

The Adona sat up. Then without a word leaped from the bed, dashed across the room, her body a silver flash in the moonlight.

Baldrik intercepted her with a grin.

"No, not the television either." He hocked the instrument with his body. "Myrrha bring her tunic."

The Adona's blue eyes were wide with fright now. She accepted the tunic, slipped it over her head.

"What are you going to do with me?" she whispered.

"Nothing so very terrible," he replied with a faint grin. "Put you to work and to bearing children."

He heard a door open softly, spun around.

Ta-uz, the uncle, was staring through the doorway. Behind him stood the gaunt cowed figure of a priest.

Baldrik cleared his sword with a rasp of steel on steel. Ta-uz slipped inside followed by the priest who closed the door softly behind them.

"What are you doing here, Baldrik?" the uncle growled. A naked blade gleamed in his hand.

BALDRİK cast a glance at the Adona. She was visibly frightened, even more so than she had been. The significance of the priest struck Baldrik's mind. Priest and high-born must have joined forces to dispossess the Adona, set Ta-uz up as ruler. It wouldn't be the first time in the bloody history of Azlanutis that such coups had been brought off.

Ta-uz must have come with naked blade to dispatch his niece himself.

The uncle's next words verified Baldrik's suspicions.

"My niece is an attractive young woman, no doubt," Ta-uz said with a smirk, "but without a future. You are a young man of intelligence, Baldrik, and destined after tonight to go far."

"Baldrik!" the Adona cried. "Don't let him kill me. I'll go to the Greater Moon with you. I'll do anything you ask, only don't let him kill me."

Baldrik grinned in amusement. Here were two bids for the weight of his sword: A brilliant career or a beautiful girl.

"The Greater Moon?" There was a cynical undertone to the priest's voice. "The land of the hereafter. You, I presume, are one of those deluded youths who have taken the sacred book of astronomy in a literal sense."

Plain John, living the scene through Baldrik's senses, realized that he had experienced this episode only a short time before. This was the scene he had dreamed or thought he dreamed last evening.

The priest went on talking, deriding the old ones who had believed the Greater Moon to be an actual world.

Baldrik said: "Then the books of science are lies?"

"Lies," the priest echoed. "No. Not lies. Our forebears were too naive to interpret the books of science, my son."

While the priest was still talking, Baldrik turned on his heel, strode to the window, gazed out on the moonlit city.

What was it Angor had said, "The spring is drying up. In a few short days the city will be a tomb!"

And here were priest and noble scrapping like hyenas over the spoils of a doomed city.

"My son," said the priest, "you are overlong in making up your mind."

Baldrik spun around. The black cowed figure had drawn a gleaming blade of steel.

"There's only one end for heretics!" said the priest and advanced shuffling across the floor.

Myrrba shrieked suddenly: "Behind you, Baldrik! Behind you!"

But the swordsman had been patiently waiting cat-like for just this move and had allowed Ta-uz to creep up behind him, thinking himself unnoticed.

With a vicious sweep of his six foot blade, Baldrik wheeled in a half circle. The steel was a flash of silver; then it bit into Ta-uz's neck, decapitated the Adona's uncle as neatly as a chicken. His head hit the floor, rolled, and came to rest on its cheek. The trunk tumbled beside it.

So quick had the action been that the priest was caught flat footed. He made a useless effort to fend off Baldrik's blow with his slender blade, then the sword descended, split him to the navel.

Baldrik wiped his blade on the bed covers, returned it to its sheath.

"The lift," he directed the wide eyed girl. "Back to the lift."

The Adona made no further effort to protest, but followed Myrrba silently out the private entrance.

UNMOLESTED, Baldrik, Myrrha and the Adona reached the inner chamber of the temple of the God in the Machine through the tunnel beneath the palace.

Baldrik saw the ship which was to carry them across the void for the first time. He had had a vague impression of it left over from San-far's memory patterns, but the actuality took his breath away.

The inner chamber was roofless like an immense cylinder pointing upward at the plastic dome of the city. In the center of the cylinder, almost filling it, the ship squatted on its jets like a gray bullet.

A port was flung back and Baldrik saw the lean wolfish figure of Croc in the opening.

"We've got them," Croc greeted him as he climbed through the opening behind Myrrha and the Adona. "Sixty-seven swordsmen, ninety-two girls snatched from every station, high-horn, swords and slave."

"Close the port."

Baldrik was scarcely listening, trying to concentrate on something Angor had told him.

"The ship is powered by atomic disintegration," old Angor had said. "The least departure from the formula of acceleration will cause the atoms to touch off any substance they come in contact with, chain-like, and blast the ship and its occupants into nothingness."

The memory patterns of San-far were sketchy misty things. Baldrik racked his brain in despair trying to turn up the vital bit of information like a man dragging a grappling hook along the muddy bottom of a pond.

Followed by Croc and Myrrha and the Adona, he made his way to the control room of the vast ship.

"Acceleration chairs," he said in a

hesitant voice. "Croc, go warn everyone to strap themselves in acceleration chairs. Myrrha, you and the Adona secure yourselves in those seats there."

Croc disappeared.

Baldrik took his place in the pilot's seat, regarded the gleaming dials and instruments on the panel with a sense of panic.

He was stage struck, he realized in despair. He couldn't recall a jot or iota of San-far's knowledge. It had all slipped beneath the rim of consciousness.

The subconscious. That was it!

He tried to relax, to sweep his mind clear of extraneous facts. Tentatively he rested his hand on a gleaming lever. Sweat beaded his forehead.

He pulled the lever one—two—three notches, stopped.

There was an awesome roar. Baldrik was slammed deep into the folds of the pilot's seat as if a gigantic hand had struck him in the chest.

He had one frightening thought. They were being disintegrated. He had pulled the wrong lever!

Then gradually the pressure began to relax. He pulled himself out of the chair, fought his way blindly to the port.

Away below him he saw the dome of Azlanutis. A hole gaped where the ship had burst through the dome. It dwindled rapidly, became a pinpoint and vanished.

He made his way hurriedly up into the nose of the ship and looked out.

The huge hall of Earth hung dead ahead, growing larger with each minute.

Sweat began to dapple his forehead again as he looked at the huge greenish world toward which they were speeding.

They had made it. They had escaped the dying world of Ma'ab. But

by the God in the Machine, how did one go about landing this monster?

His last recollection was of climbing madly back down the ladder into the control room.

PLAIN JOHN regained consciousness in his room in Kurlov's sanitarium. His head throbbed damnably, and every nerve in his body felt as if the ends had been grated raw with a rasp.

He was listless and lay quietly on his back gazing at the cream ceiling, trying to integrate the strange experiences which had occurred to him.

He was beginning to remember a great many other things than the episodes on Azlanutis. A strange city off the coast of Africa, now sunk beneath the waters of the Atlantic. The Greater Moon had been Earth. Their home had been on a smaller moon revolving inside the orbit of luna. It was all jumbled, incoherent.

But he wasn't Baldrik; that much he knew. He was still Plain John, and he was sane.

The door opened softly and some one came into the room. He didn't turn his head.

"Baldrik?" asked a familiar voice.

Plain John looked at the starched white figure of nurse Lang and grinned in spite of his headache.

"No luck!" he declared triumphantly and sat up. "You have to implant your memory pattern in your successor while you're still alive. You can't do it by proxy. That's straight from Angor."

Ann Lang tucked a wisp of blonde hair behind her ear, came inside, locked the door.

"I've thought so right along," she admitted, "but Kurlov won't give up until he's exhausted every possibility."

A rather horrible suspicion forced itself on Plain John. It was quite possible that this diabolical cult had

plunged the Earth from age to age in bloody wars of conquest.

He became more convinced of the truth of his deduction by the moment. Only swordsmen, mercenaries, had migrated in the spaceship to Earth. Their very name, the Cult of Conquerors, betrayed them.

They could afford to lose, he realized, taking their defeats as experience, regrouping their forces, working subtly from the inside. He was reminded suddenly of a doctrine which had originated in the Fascist countries when they saw that the war was going against them.

"Wars are battles in the long view of conquest and can be won or lost!"

It could have been inspired only by the Cult of Conquerors.

All at once it struck Plain John what the girl had just said.

Kurlov would try the operation next in order to black out his identity, hoping that the ego of Baldrik would come through triumphant.

Also the girl was inferring that she and Kurlov had been contemporaries of Baldrik.

He said: "You mean that you and Kurlov have been living since . . ."

"Since Azlanutis," she nodded. "Since we came in a spaceship from the tertiary moon and founded a city here on Earth while the Neanderthal Man was still roaming the oak forests of Europe."

Finally he said: "But that's impossible!"

Ann shook her yellow head.

"Our egos, our memory patterns, our personalities have lived, because they've been transferred to young bodies every time we began to grow old."

"What happened to the egos of all those people whose bodies you've usurped?"



"They remain, but they're submerged like the dormant half of a split personality." She brushed back her yellow hair with an impatient gesture.

PLAIN JOHN was regarding her queerly, conscious of stirrings in his mind, pictures of highly indecorous episodes between himself—no, Baldrik—and this girl.

Ann, divining his trend of recollections, blushed faintly. "Don't get any ideas," she said. "You aren't Baldrik, yet."

The room had grown perceptibly darker. The nurse stepped to a wall switch beside the door, snapped on the light.

"Good night, Plain John."

He leaped to his feet, his green eyes hard.

The girl realized instantly her danger, saw that she could never get the door unlocked, and dashed suddenly for the window instead.

"No, you don't!" said Plain John, divining that she intended to break the glass, hurl the key to the lawn.

It was no time for chivalry. He seized her, hurled her to the bed. She opened her mouth to scream, but Plain John clamped his hand over it.

The girl struggled blindly, her long bare legs thrashing.

"Calm down," said Plain John. "I'm not going to hurt you."

The girl ceased her struggles, relaxed limply.

"I don't want to knock you out," he went on gruffly; "but I will if I have to. If you scream . . ."

The girl's blue eyes were enormous. She managed to nod her head slightly. He took his hand away from her mouth, took the key from her fist, still holding her down on the bed.

"You can't get away," she gasped.

"I can try. I'm going to turn you

loose now. Don't move or I'll be forced to resort to—er—extreme measures."

She said, half quizzically: "I won't move."

Plain John turned her loose, began to tear the sheet in strips.

"Sorry to do this."

He tied her trim ankles together, tied her wrists behind her back, tied ankles to wrists so that she was arched backward like a how.

"I'm not Houdini," she complained bitterly, then: "This is foolish. You can't get away."

"Where are we?" asked Plain John stonily.

"About thirty miles south of the city on the Lancaster Pike."

"Thanks," said Plain John, and gagged her with another strip of sheet. "Sorry to handle you so rough, but I don't relish the idea of being Baldrik. I may not be perfect, but I've a fondness for myself."

At the door he cast a last glance at the girl. She was lying on her side, facing him. Her skirts were rumpled clear of her long trim legs. Her blue eyes were cloudy.

"I reckon they'll come to look for you before too long," he said and cautiously opened the door.

The hall was deserted.

He slipped out, locked the door behind him.

A broad bamboo-brown runner of twist carpet flowed down the corridor, turned a corner. There were doors on either hand. He was in a wing of the sanitarium, he saw, on the second floor. A cool breeze from an open window at the end of the hall brought it forcibly to his mind that he had on nothing but thin silk pajamas.

He had to find clothes of some description and those in a hurry.

He tried the doors cautiously one after another along the hall, but they

were all locked, and the key wouldn't fit them.

When he reached the end of the hall he glanced out the open window.

It was quite dark now, but there was a light burning at the main gate which he could see through a lane of oaks.

The gates were closed. There was a gatekeeper in a sentrybox, too. He could see the man lolling back in a chair. He appeared to be reading.

The light glinted like a million diamonds off broken glass set in the concrete on the top of the twelve foot brick wall which surrounded the estate.

**T**HEN he saw a man come into the circle of light. He was leading two mastiffs on short choke leashes, and there was a revolver strapped to his waist. Obviously he was patrolling the grounds.

Plain John whistled silently. Kurlov left very little to chance.

He withdrew from the window, started to turn the corner. The ball continued through the main part of the sanitarium, but a small stair well yawned at his elbow. A back stair, he guessed.

He had a rough idea of the plan of the building by now. It must be U shaped, the wings forming the U. The main stair would be in the principal building.

In mounting desperation, he crept down the uncarpeted back steps, his bare feet making no noise. He came out in a high ceilinged hall glowing with indirect light. The walls were wainscoted in walnut, tinted a pale olive green above the panelling.

He was still in the wing, and he could see part of a magnificent entrance hall beyond the corner. The entrance hall was flooded with light. The lower floor appeared empty.

With his heart fluttering in his

mouth, Plain John started back the hall toward the rear of the house. He had taken only three steps when he was halted by the unintelligible mumble of voices.

They came from a door just ahead and on his left. Then the door knob turned.

Plain John dashed like a frightened mouse back into the cover of the stair well.

He saw Dr. Kurlov appear in the door. The doctor was saying:

"The key is locked in Baldrik I's brain. I tell you, he was the only one of us who was intimate with either Angor or Laritan. Besides Angor implanted San-far's memory in Baldrik I. And San-far helped to develop it."

There was an answering rumble of a voice from within the room.

"I don't know!" Doctor Kurlov answered impatiently. "But Baldrik I has the key. He might not know it, but he's got it. Rest assured of that."

Plain John's eyes opened in surprise. What was it he was supposed to have locked in his brain cells? He heard Dr. Kurlov say "Good night," and start towards him.

He backed further up the steps.

Then Dr. Kurlov turned straight up the stairs where Plain John was crouched.

**PLAIN JOHN** scuttled backward up the stair like a crab. He came out in the hall, glanced wildly around.

He could hear Kurlov puffing up the steps, and dashed around the corner into the main building, tried the first door. It was unlocked. He flung it open, sprang inside, shut it behind him.

He heard a startled gasp and spun around.

A black headed girl in a black net gown had her hand to her mouth and was staring at him from huge black

eyes. Pale flesh gleamed through the gown. She was standing beside a bed which had just been turned down.

For a moment they stared at each other, too startled to breathe.

Then Plain John grinned feebly. "I guess I've got the wrong room." It sounded lame when he said it.

The girl snatched a lacy black negligee from the foot of the bed, slipped her arms through the sleeves. She was slight, slender, yet there was a very mature quality to the curves of her body. She fastened the negligee, asked with narrowed eyes:

"Who are you?"

"Baldrik." Plain John was desperate enough to gamble on anything.

"Baldrik?" she echoed. "But I thought there was some difficulty? I heard your ego hadn't come through."

"I didn't at first," he said hurriedly. "If I hadn't been killed in Atlantis before I could train my successor everything would have been all right. This awakening the old racial memory cells is . . . is difficult. I'm still not clear about a number of things."

The girl relaxed. She took a cigarette from a carved teak box on the bedside table, lit it. Her eyes were slightly almond shaped, her red lips curved, sulky.

She asked: "Why did you barge in here?"

"I—I was mixed up about the rooms." He wondered nervously if the hall was clear yet, decided he'd better stall a while longer.

The girl gave a skeptical laugh.

"Same old Baldrik. You haven't changed any, I see." Then she grinned, dispelling the sulky expression of her lips. "Run along, Baldrik, if that's who you are. I'm going to bed—alone."

Plain John reddened. This alter ego of his seemed to have gotten around. He mumbled, "Good night," halted

suddenly with his hand on the knob.

From the hall came the sound of shouts. Then a hell began to peal wildly throughout the building. It was echoed by another bell outside.

They must have found Ann Lang!

He wheeled back into the room. The black headed girl was pointing a small pearl handled automatic at his chest.

She said in a cold, tight voice: "Raise your hands—slow!"

There were two white patches at the corners of Plain John's mouth. His green eyes were desperate. He raised his hands shoulder high.

"Move back from the door."

He took a backward step, then another. The girl came towards him. She reached the door, put her hand on the knob. The hell was still ringing.

Then Plain John jumped.

His hand hit the girl's wrist. The tiny automatic thudded on the rug. He scooped it up, and putting his foot against the edge of the door, turned the automatic on the heaving breast of the girl.

"Don't scream."

She regarded him silently with glittering black eyes, then turned back on him, moved to the bed. Her hips swayed slightly from side to side when she walked.

The hell stopped ringing. The confused sounds of voices raised in excitement were louder. He moved swiftly to the window, pulled the curtains aside an inch.

The girl's room was at the back of the man building looking out on the court formed by the two wings.

The wings were a blaze of light, as was the court. There were silhouettes moving at several of the lighted windows. The guard with the dogs ran across the court.

He let the curtain close, turned back to the girl.

There was a heavy rapping at the door!

PLAIN JOHN bounded across the room like a tiger. He jabbed the automatic in the girl's soft ribs, said: "Sing out that you're not dressed."

She gave him a thoughtful look, called: "What's the ruckus? I'm not decent."

A masculine voice rumbled: "Seen anything of a man about, Myrrha? Tall skinny lad in black pajamas."

"No . . . Who is he?"

At Plain John's prodding, she peeled the negligee and gown off one arm and shoulder, went to the door, opened it a crack. Plain John was right behind her. The girl looked out, only her head, the bare arm and shoulder visible.

"Who is he, Sam?"

"Fellow by the name of Bancroft. Dangerous. Better keep your door locked."

"Right, Sam."

She closed the door, bolted it.

"So they haven't been able to subdue your ego yet," she said to Plain John with that sudden boyish grin. "Well, keep in there pitching. But Baldrik was a rowdy iron-willed sort of chap. You'll have a time keeping him down."

He regarded her with vague misgiving.

"He called you Myrrha. Are you the same Myrrha who was the Adona's serving girl in Azlanutis?"

She relaxed on the bed with a sigh.

"Fundamentally, fundamentally, my lad. But there are differences. Everything is a little different each time you change bodies. It's hard to describe. Differences in vision, differences in the way your nerves and glands react."

She sat up, hugging her knees.

"Actually Myrrha's dead as a mummy. And she's been dead a million years. It's a paradox, this chain of

memory into the past. I've Myrrha's memory patterns and her personality and her ego; but I'm not Myrrha. I've often thought, the different lives are like the links of a chain. Each link is connected and yet it's a separate individual link."

"When I die, I won't really go on. But the next girl will be persuaded that she's Myrrha, just as I am."

"Who was the nurse, Ann Lang?"

"Don't you know? She's the Adona."

Plain John frowned, digested this.

"Who was Kurlov?"

"He wasn't taken into the group until the time of Atlantis. He's an Atlantean."

"Atlantis?"

"New Azlanutis, if you want to be a stickler. It was our first civilization here on Earth after the crossing. It's been corrupted to Atlantis through the ages, though."

Plain John turned this over and over in his mind. He still couldn't entirely rid himself of the feeling that he was mad as a hatter.

RENEWED shouting from the grounds outside and the eerie baying of the dogs startled him back into the problem at hand.

He asked abruptly: "How did Dr. Kurlov bring me here?"

"In the helicopter," Myrrha said before she thought, then set her lips.

"Helicopter! Where is it?"

The black headed girl looked sulky. She didn't answer.

"Listen," said Plain John in a level voice. "I'm a desperate man. I don't want to lose my identity. I'll get the information from you if I have to heat it out."

She regarded him with narrowed black eyes. "I believe you've enough of Baldrik in you to do it." She shrugged. "The helicopter's on the roof. But it's

hopeless. Even if you get away, they'll catch up with you. They've men where you least expect; big men, owners of newspapers and radio stations, senators and stock brokers and munition manufacturers."

Plain John was appalled at her words. With every new disclosure, the strength of the net entangling him, entangling mankind for that matter, became more apparent. He swallowed, said stubbornly:

"They haven't got me yet."

"You're caught; but you don't know it," she said.

Plain John went to the window again, glanced out.

Lights were still streaming from the wings, and figures moved about through the shrubbery beyond the court.

"When they quiet down," he said turning back to the girl, "we're going to the roof."

"We?"

His cheeks reddened slightly. "That's right. If I recall my internship, the roof of the hospital was a great spot for the young doctors and the nurses to—er—look at the moon." His cheeks flushed redder. "If anyone sees us on the roof, they'll think—they'll think . . . well, anyway they'll probably not intrude. Besides I need you to show me the way."

Myrrha burst into laughter, shook her head, her black eyes dancing.

"You're a card. I've a suspicion that I'm going to be fond of you after you're roped in." She patted the hed beside her. "It's going to be a long wait. Sit down."

"No, thanks," he replied in a stiff voice.

"Afraid?"

"Yes," said Plain John frankly.

Twice more Myrrha had to go to the door and reassure searchers that the escaped prisoner wasn't in her rooms.

It was two-thirty in the morning before they gave up the search, convinced at last that he had escaped from the grounds.

"All right," said Plain John nervously, "let's get started." He went to the door, opened it a crack, glanced out. The hall was deserted.

"In your pajamas?" Myrrha protested.

"It's all I have."

The girl shrugged, stepped through the door ahead of him. She led the way to the small stair in the wing. The sanitarium was four stories high. They emerged on the roof, panting.

Plain John glanced about the flat moonlit roof, saw a black figure at the north corner.

The cold night air struck through Plain John's thin pajamas. He slipped his left arm about the girl's waist, strolled toward the bulking shadow of the helicopter. He could feel the warmth of Myrrha's soft waist. His right hand held the automatic against her ribs.

THEY reached the helicopter. Plain John slipped into the cabin, still keeping Myrrha covered. He touched the starter. The motor broke suddenly into life, the blades began to whirl faster and faster.

Myrrha screamed: "Help! Help!" and ran towards the guard.

Plain John saw the man break into a run across the roof. Then the helicopter lifted groggily into the air.

With a vast sense of relief he nosed it over the edge, dived and zoomed upward higher and higher, gaining altitude fast now.

Below him on the silver expanse of the roof he could see two figures. One of them raised his arm. An orange flash stabbed up at him. The sound of the report reached him, but the shot

missed.

Twice more the guard fired, then he was out of range.

He was free. A sense of power set his pulse to throbbing. He didn't know what he could do with the helicopter, or how to reach his home clad only in black silk pajamas, but he was clear temporarily, at least, of the Cult of Conquerors.

Plain John, flying swiftly northward through the night, began to feel a let-down. He was tired. Things had been happening too fast for him to adjust. He had reacted physically, but without grasping the bizarreness of the situation.

He was thinking of mankind's suicidal drive to make war. Often he had wondered why men should kill each other at the bidding of a small clique of rulers: Alexander, Caesar, the Spanish Conquistadores, Napoleon, Hitler!

A thrill of understanding jerked Plain John out of his lethargy.

Apparently the cult, an alien growth like cancer which had infected Earth from space, had tried time and again to spread itself by conquest. There had been times when it had verged appallingly close to success.

But always fresh virile stock of Earthmen had swept in from the steppes and plains, forests and deserts to stay the tide, only to become infected themselves and take up the sword for the cult. It was insidious!

He could see it clearly now.

First the Atlanteans, the original colony sweeping to world domination; then batted, smashed by the desperate tribes of Earthmen. The cult had transferred to Egypt next, where it waxed strong threatening the earth, until the wild Semetic hordes raised against the oppressor.

But nothing really stopped the cult. When the Persians gave them the death

blow in Egypt and the fertile crescent, they infected the Persians themselves who in turn were stopped by the Greeks and so on until this present debacle of World War II, their latest bid for world supremacy.

Plain John was appalled. He felt like one man trying to hold back an avalanche.

America, he realized, was young and strong. Here must be the new center of infection. He wondered in dismay if any man outside the cult even suspected the force shaping history.

PLAIN JOHN set the helicopter down in a vacant lot half a block from his house. It was three twenty in the morning, and the suburban street was deserted.

He made his way unmolested to his home, took the key from the mailbox and let himself in the front door.

This had been his father's house. The young medic lived there alone, a woman coming in by the day to clean and cook what few meals he took at home.

He wearily climbed the steps to his bedroom, shucked out of the black silk pajamas, crawled into a pair of his own. He stretched out on the fresh sheets, turning his problem over and over.

What could he do? He couldn't go to the police. They would laugh at him. What could he accuse Kurlov of doing? Kidnaping? It was his word alone against them all. He shivered. It seemed hopeless. He fell asleep still wrestling with it.

PLAIN JOHN was awakened next morning by the front door bell. He dragged himself sleepily from the bed, tugged on a robe, slapped down the steps in his slippers.

The bell rang again and again.

He fumbled with the lock, cursing the disturber of his rest, pulled the door

open.

The sleepiness was driven at once from his brain.

Two burly, blue uniformed police stood in the entrance. Behind them Plain John caught sight of the bearded face of Dr. Kurlov and the stiff white uniform of Ann Lang.

He started to slam the door, but one of the police had his foot in the way.

"No, no, lad," said the cop. He had a broad pleasant face tinged now with a look of pity.

"What is it, officer?"

"Nothing to alarm yourself about. We want you to take a ride with us, that's all. You come along with Dr. Kurlov like a good lad."

"That's all right, officer," Dr. Kurlov interrupted in a pleasant voice. "I'll take charge now. He's not violent."

Plain John's green eyes narrowed as the audacity of Kurlov's intent revealed itself.

"This is preposterous! Do I talk like a crazy man, officer? You can't get away with this, Kurlov."

The officer looked embarrassed. He obviously disliked this job.

"The doctor's only trying to help you, lad."

Alarm swept through Plain John. They couldn't kidnap a man from his own house in broad daylight and with the aid of the police. His common sense told him it was impossible.

He said: "Listen to me, officer. I'm not insane. This man is kidnaping me. I don't ask you to assume the responsibility, but take me to the police station. Dr. Kurlov has no right to confine me in his private sanitarium. I demand that I be examined by a competent physician, and if I'm crazy, committed to a public institution."

"Now why would the doctor want to lock you up, lad?" He might as well have added, "If you're not crazy."

Kurlov said in an undertone to the police: "Paranoia. A decided persecution complex. He has delusions that a spirit is trying to possess his body."

Plain John ground his teeth in rage. The audacity!

"I hate to get him excited," Kurlov went on, "perhaps if I show him the court papers . . ."

Ann Lang suddenly thrust herself forward.

"Don't cause the doctor any trouble, John." Her blue eyes looked appealingly into his. She gave an apologetic little glance to the anxious policemen. "We won't let the nasty spirit chase you out of your body—will we?"

The policemen said, "No, ma'am," in hearty voices.

"A lawyer!" Plain John was sweating. "At least let me talk to my lawyer."

"He's getting upset," said Kurlov in an anxious tone.

The two cops moved forward, grasped the young medic firmly by his elbows.

Plain John felt his sanity trembling. This was absurd, but it was happening. It was borne in on him how impossible it was to fight them openly. They had the deck stacked.

"Let me get dressed," he surrendered with unexpected meekness.

PLAIN JOHN BANCROFT, in a gray herringbone suit, sat with the executive council of three in the pit of the auditorium. His green eyes roved in amazement around the seats rising steeply in front of him like the semi-circular tiers of an operating theatre.

Kurlov, who headed the executive council, was addressing the silent audience:

"Baldrik XVII was killed in Atlantis before he had trained a successor. The barbarian hordes from the Sinking Con-

continent in the South Pacific for which a later investigation has suggested the name of Lemuria, destroyed our city and severed our last contact with the science of our mother world, the tertiary moon . . ."

Plain John was only half listening. All this he had discovered earlier in the day with Kurlov. The men and women in the tiers of seats rising above him occupied his whole attention. They sat there silently staring down at him.

There must be two or three hundred, he estimated; young and old, in evening gowns and white tie and tails, navy and army uniforms and dark business suits. Among them, he recognized faces familiar to the nation: a famous movie star, a newspaper publisher, a high ranking general. There were others as well known in their fields.

But the council of three had been the greatest surprise.

Kurlov was the chairman. On the psychiatrist's right sat a middle-aged man with a strong, smooth shaven face and penetrating gray eyes, whom Plain John had recognized as Stehlin Grossard, a world renowned specialist in nuclear physics. He had been one of the men instrumental in developing the atomic bomb.

The third, Hervey Graham, had completely dumfounded Plain John. Hervey Graham was Secretary of State.

Dr. Kurlov, he realized, was still talking in his even, well modulated voice:

"When our ancient home, the tertiary moon, broke up and fell to Earth, the resulting cataclysm submerged Atlantis forever. Only a handful of us escaped to Egypt to continue our civilization.

"None of us who escaped were scientists. We had only the memory of a splendid civilization to guide us."

Plain John gnawed his under lip, fol-

lowing Kurlov's words with growing concern.

All day, while Plain John had been caged in his room in the sanitarium, he had seen the helicopters arriving. The roof must be thick with them, and the grounds in front were full of cars.

"The attempt to regain our heritage of the lost sciences has been a slow and arduous task. Even yet we are centuries behind Azlanutis.

"I have given this brief recapitulation," Kurlov went on with a slight pause, "in order that you can understand how imperative it is that we re-discover certain knowledge which was lost to us when Baldrik XVII died without a successor.

He paused, said:

"We are faced with a crisis. The fate of all of us lies in certain memory patterns which have lain dormant in the brains of Baldrik's descendants.

"Unless we succeeded in reawakening those racial memories in time, total annihilation would be our lot." He paused again, repeated with emphasis: "Total annihilation, or worse; a reversion to the primitive animalistic condition in which we found man when we reached this planet!"

A sigh swept the audience. Plain John could feel the hair crawl on the nape of his neck.

What was Kurlov implying?

**D**R. KURLOV dabbed at his forehead with a handkerchief, went on:

"There was a legend that Ankor and Laritan, the founders of the cult, discovered the secret of perpetuating the ego while investigating the extent of racial memory.

"It was a possibility. We traced Baldrik's descendants, experimented on hundreds before we found John Bancroft.



"John Bancroft is a lineal descendant of Baldrik XVII. He has an unusual block of memory cells relating to Azlanutis and Baldrik I.

"More than that, we have succeeded in rousing them. But Baldrik's ego failed to come through dominant."

Again Kurlov dabbed at his forehead.

Plain John felt the barrage of eyes focus on him and fidgeted uncomfortably. His mouth was dry and his stomach felt hollow.

As he looked up at that argus-eyed audience, he experienced a sinking feeling of despair. How could he, even working from within, hope to oppose such an array of power?

Kurlov said tersely: "In a talk with John Bancroft this afternoon, he agreed to place the resources of Baldrik's memory patterns at our convenience.

"The situation is peculiar. He is the possessor of a dangerous store of information about us. Also he holds the key we have been searching. But he is not one of us.

"He is, gentlemen, very much like a keg of powder which we need desperately; but which can blow us all up.

"Under the circumstances, I hesitate to act without your approval.

"In accordance with the ancient customs, I recommend that John Bancroft, M.D., be admitted into our society with the usual precautions against treachery.

"The decision is in your hands," and Kurlov sat down with a grunt of relief.

In the succeeding silence, Stebbin Grossard, the nuclear physicist scribbled something on a scrap of paper, slid it across the desk to Kurlov, who read it, then passed it along to his confrere, the Secretary of State.

A look of agreement passed between the three men, and Kurlov stood up again.

"My confreres have recommended

that a ten-minute period of open discussion would be in order, at the close of which we will vote on John Bancroft."

The hall was in immediate turmoil. Half a dozen voices shouted questions down at the heads of the Executive Three, while heated discussions broke out among the tiers of seats.

During the next ten minutes Plain John was too astounded by what he heard to be nervous.

He learned, as Kurlov answered questions, how he had been approached, his interest subtly aroused in the theory of racial memory. The psychiatrist, while appearing to be hesitant about proceeding with the experiments, actually had egged him on.

NOR was that all. They had investigated his entire life. They knew what his school record had been, who were his friends, how many relations he had alive. Not a secret of his life but was laid bare as the audience poured their barrage of questions at Kurlov.

In the end they accepted him almost unanimously, though, and the Executive Three wrung his hand.

Kurlov said dryly: "You're in, Plain John, but there are several inconveniences. Two men have been assigned to guard you, and they'll never leave you night or day.

"Ordinarily that would be as long as you live, but you are fortunate."

Plain John echoed blankly: "As long as I live?"

"That's the rule. Every new member is assigned two guards who stay with him the rest of his life. But you are lucky. If everything goes as we hope, the guards will be superfluous in a few days."

"A few days?"

Plain John's eyes narrowed. What

did the psychiatrist mean by that? Was he implying that Plain John would no longer be in a position to hurt the cult? Dead possibly?

That seemed the only conclusion. The other was too fantastic. If he weren't dead or out of the way, then Kurlov was inferring that there would be on one to whom he could go, that the cult would be in control of the world!

He watched the audience trickle out of the exits.

"Come along," Kurlov urged him. "We'll get at that information. We've no time to lose."

Plain John fell in with the nuclear physicist, the Secretary of State, the psychiatrist. He noticed two ordinary young men close in behind him. There was nothing out of the way about them, except a certain hardness of features, and slight bulges in their coats. Shoulder holsters!

Already, he realized, his guards had attached themselves to him. The game had begun!

Kurlov led them out of the auditorium by a rear exit and along the wing of the sanitarium to his private office.

It was a large room, Plain John saw, plainly done, but comfortable. His two guards filed in last, closed and locked the door behind them, then sat down silently against the wall.

Kurlov indicated heavy leather upholstered chairs for the Secretary of State and the nuclear physicist. He seated Plain John behind the massive walnut desk, then sat down himself.

Plain John lit a cigarette nervously, cracked his knuckles.

Dr. Kurlov opened the conversation.

"Plain John," he said, "I've no doubt you're curious about what we want from you. I'll be brief. We want the secret of space travel!"

Plain John stared at Kurlov in dis-

belief.

"But—but—hell! I don't know any more about it than you."

"You're mistaken there," Kurlov went on smoothly. "Before Angor and Laritan were killed in the pits of Azlanutis, they implanted San-far's memory patterns in Baldrik I's brain. San-far helped them to develop the ship which brought them to Earth.

"Think, Plain John, think!"

Plain John did think.

THE power such a ship would give these men was inconceivable. The horrors of a possible war, where nations could blast each other off the map with atomic bombs, had upset the world. An hour after war started every city in the world could be destroyed utterly.

In such a war the cult stood as much danger of being wiped out as any faction—probably would be. But with a spaceship, they could escape the consequences in the void. Untouchable, they could even drive the ship in an orbit around Earth from whence they could sally forth to rain destruction on the helpless peoples.

The possibilities were diabolic. But it was the simplicity, the horrible effectiveness of such a scheme which impressed Plain John most. No wonder Kurlov had said guards would be superfluous in a few days!

Plain John felt the sweat prickle his forehead. His palms were damp and he wiped them on his handkerchief.

The three men's eyes were fastened on him, he realized, curious, eager.

"THE release of atomic energy," the nuclear physicist prodded Plain John gently; "came principally through our efforts. But in a few years all the nations will have it too. It's a control we're interested in, a means of channeling the energy."

Plain John, racking his brains, began to recall certain words of Angor when he had spoken of that long forgotten spaceship which had carried the colonists from the tertiary moon to Earth.

*"It is powered by the disintegration of the atom. Any departure from the formula for the rate of acceleration will cause the atoms to touch off everything they come in contact with, chain-like, and blast the ship and its occupants into nothingness!"*

He heard the nuclear physicist add, "Only a hundredth part of the energy is released, but it is enough to overcome the gravity of Earth, if we could only channel it."

Plain John regarded them with a frown of concentration. The aged Savants, he knew, had contrived to release an infinitely larger percentage of the energy than that. That was why the danger of a chain reaction exploding the atoms of the ship itself had been so great.

A nebulous plan began to form in his mind.

He took pencil and paper, began to doodle, his green eyes indrawn.

A tense silence gripped the others.

Plain John tried to sweep his mind blank of extraneous facts, allow his subconscious free play. The patterns of thought which he'd inherited were timid things. They hovered just below the realm of consciousness. It was difficult enough to get his mental fingers on the slippery recollections of Baldrik, but San-far's were buried even deeper in the muddy fragmentary stirrings of his cerebral cortex.

A string of figures occurred to his mind. He set them down. Other figures, symbols, formulas welled up from the yeasty depths. His pencil scribbled on the paper almost as if of its own will.

At length Plain John relaxed, pushed

the paper across to Grossard.

The specialist in nuclear physics snatched it from the desk top, scrutinized the figures by the aid of the lamp. A breathless exclamation escaped his lips.

"What is it?" asked Kurlov in a tense voice.

"Power!" the physicist breathed. "Power the like of which has never been dreamed." His voice shook. "If these figures are correct, ninety percent of the energy contained in the atom can be released. Think of it! Ninety percent! Hundreds of times the energy which at present we obtain."

Silence held them a moment longer, then Kurlov burst out: "But is there any means to channel it, man?"

Again their eyes centered on Plain John.

The young medic returned their stare with equanimity, said:

"That was the means of generating the power that Angor and Laritan used to drive the ship." He hesitated. "The difficulty lay in regulating the flow of energy . . ." He was voicing words but half understood by himself, words which were rising fast now in his consciousness.

"The actual appliance of the power was purely mechanical once the release of energy was slowed down to a point where there would be a steady controllable output."

The physicist nodded.

Kurlov said impatiently: "I'm a psychiatrist, not a physicist. We're disrupting the atom now. Where does this extra energy come from?"

"We've been splitting U235," the physicist explained in a hurried voice, "into barium and krypton and only releasing a portion of the atomic binding energy of the atom. We actually obtain less than one-tenth of one percent of the total power in the U235 atom.

"If this process Plain John has outlined proves feasible, then we'll almost annihilate the nucleus, releasing hundreds of times the atomic binding energy!"

PLAIN JOHN, listening to Grossard, felt like a poker player sitting behind a bob-tailed flush. Grossard was one of the greatest specialists in nuclear physics the world had ever known.

And Plain John had given him a process which, once set in operation, was beyond control; the rate of disintegration which Angor had warned Baldrik would destroy ship and passengers.

"But the control?" protested the physicist. How can the violence of the explosion be controlled and released slowly when needed?"

This was the test! On his ability to deceive the physicist on this point, Plain John's entire strategy rested.

He said slowly, his forehead glistening with sweat: "Give me the pencil," and began to sketch.

He shoved diagram after diagram across the table. Grossard snatched them up, studying them intently, his eyes aflame with eagerness.

"Yes, yes," he kept muttering to himself. "I see. I see."

Plain John was dragging from the well of his subconscious the design of the spaceship's driving mechanism. He had no intelligible conception of why it should work. But he had remembered that the Savants had built the ship so that a misapplication of power would blast it into infinity.

He knew vaguely that in the lower brackets the control was adequate; but once the disintegration passed the safety factor it also passed beyond human agency to stay.

There was no way of determining the safety factor except by experimenta-

tion. Angor had lost seven successive bodies in discovering at what point the disintegration passed beyond control.

It was not indicated in the design, but had been locked fast in the Savants' brains, then in Baldrik's.

"It'll work," said Grossard with satisfaction. "We can't be a hundred percent sure but it should work."

Plain John let his breath escape in relief.

"How long do you think it'll take to build her?"

Grossard replied with a faint smile, "The ship is built."

"What?"

"She's built," Grossard repeated. "But our drive was inadequate, uncertain to say the least. Frankly, I would have hated to trust myself in space with her."

"But . . ." began Plain John. Grossard interrupted him.

"We only need to reconvert the engines. I'd say it'll take a month."

Kurlov said: "You'll oversee the installation of the new engines, Plain John." It wasn't a question.

Plain John regarded the doctor queerly, appalled by a sudden realization. He was about to murder only God knew how many people. It would be done indirectly, it was true, but their blood would be on his hands as certainly as if he personally cut every one of their throats.

He nodded, steeling himself against the insidious weakness.

"Yes," he replied in a dead tone. "I'll see that it's installed—properly."

PLAIN JOHN met dozens of men during the following days: young engineers fresh from technical college, older men, sober thorough; but all with that indefinable stamp of impossible age about their eyes.

He worked closely with Grossard, the

nuclear physicist, and always his two saturnine guards were at his elbow, whether eating, sleeping, bathing or working. Plain John never was so sick of any two people in his life.

He was taken first thing across the lake to the preposterously massive drome which he had seen first from his window. The natives, he learned, had been led to believe it was a government project of some scientific description. Plain John was in a mood to expect anything. But his first inspection quite took his breath away.

The drome was tremendous, fully a mile in length and towering hundreds of feet in the air. But the ship which it housed was what stunned Plain John.

The ship filled the oversized drome like a caterpillar fits its cocoon.

Grossward, who had already started the men working on the engines along Plain John's specifications, showed the young medic over the ship. It took the better part of a week, and when Plain John had seen it all he couldn't believe it.

Vegetables and fruits and grain were growing in tropical abandon on certain decks. Soilless gardening, Grossard pointed out, under artificial sunlight. On other decks cows and sheep, pigs, goats and chickens exercised on treads or munched contentedly in stalls.

Plain John saw refrigerating units, air and water reconverters.

Nothing was lost aboard the ship. Air, water, even the wastes from the body were reconverted. She was a world sufficient unto herself.

"We expect to be aboard for a long time," Grossard explained dryly.

But beyond that no mention was ever made in Plain John's hearing of their destination.

He remained uninformed as well about the purpose of the cult other than their avowed one of regaining the lost

science of Azlanutis.

There was a sinister overtone about their unwillingness to put their intentions into words which steeled Plain John to his purpose. The very thought of the horrors and desolation which would result in the event of an atomic war made him ill.

Work proceeded with a rapidity which astounded him, until he realized that the cult commanded the entire resources of the United States.

He was turning this over in his mind as he left the drome, tired and with a bitter realization that tomorrow his job would be finished.

The engines were installed; the date of departure set.

He had done his work well. The takeoff, as he had advised would be slow, and the rate of disintegration would fall below the safety factor. But under the gradual increasing acceleration more and more power would be needed.

SOMEPLACE in the void that safety factor would be reached and passed. The ship would disintegrate, but she'd be well beyond Earth's envelope of air. Regardless of the violence of her explosion, no chain action could possibly be transmitted to the matter forming Earth itself.

Night had fallen. The moon which had risen before dusk silvered the waters of the lake along which Plain John's route led.

Wrapped in thought he entered a wood which ran down to the shore, brought up short, whistling inaudibly.

Myrrha had stepped out of the wood like a haemodryad. He saw her clothes in a heap at the foot of a tree. Her figure, lithe and firm was pale ivory in the moonlight.

Plain John felt swept away by the sheer pagan beauty of the scene. He

wouldn't have been surprised to see a goat-footed satyr dash out of the wood after the naked nymph.

He didn't move, didn't make his presence known. His two guards, who were trailing half a block behind him, saw him stop and paused out of sight of Myrrha.

Then the girl turned, caught sight of him in the shadow of an oak. With a throaty laugh, she dived into the lake.

Plain John was entranced. He sat down on the rock which jutted over the water.

The girl's head and shoulders broke the surface. She gave her short dark hair a flip, laughed up at him. Plain John could discover no evidence of outraged modesty in her expression.

"Where are your shadows?" she asked.

"Back the trail a ways, smoking. They're as sick of the sight of me as I am of them."

She dived out of sight, her form a momentary silver flash, disappearing in the black depths. When she came up, she asked: "Still here?"

Lighting a cigarette, he grinned down at her over the flame. "I like the scenery."

Myrrha splashed water on him.

"They're saying at the sanitarium that we sail in ten days."

He nodded gloomily, recalled the appalling consequences of his withholding the essential fact about the safety factor from the nuclear physicist. Somehow, he had failed to appreciate that Myrrha, too, would go up in that blinding explosion. He leaned forward, saying in a low earnest voice:

"Let's run away."

"Run away from what?"

"From this whole mess. From the cult and the spaceship."

"Miss the sailing?" Myrrha echoed in genuine astonishment.

He nodded eagerly.

She regarded him in perplexity treading water her oval features glistening in the moonlight.

"Do you want to get blown up by atom bombs," she asked at length. "Don't you realize that this next war will almost wipe the earth clean?"

THE complacency with which she mentioned the wholesale destruction of the millions of men and women and children shocked and angered him. More than that, it was direct confirmation of his direst fears. Working with the men on the reconversion of the ship's engines, he had begun to grow fond of them in spite of himself.

Always lurking in the back of his mind had been the realization that at the last moment he could "remember" the safety factor and call it to their attention.

Now he leaped to his feet, called, "Good night," in a strained tone and strode off.

Myrrha looked after him, her dark eyes puzzled.

In spite of the sudden hardening of his determination not to allow any maudlin sentiment to sway him, he couldn't resist glancing back.

He saw the girl climbing to the rock like a picture from the dawn of the world.

Two white patches appeared at the corners of his mouth. He plunged abruptly into the wood.

DR. KURLOV met Plain John at the door of the sanitarium and asked:

"Is there anything at your home that you especially want to take with you? We're moving aboard the ship at ten in the morning.

Plain John regarded the black bearded psychiatrist in surprise.

"I understood we weren't sailing for

ten days yet."

"We're not." Kurlov linked his arm through Plain John's, led him down the corridor. "But it takes time to move. There are well over four hundred of us, you know. Besides this'll give us opportunity to adjust ourselves to our new life before we actually take off."

"Well," John replied in relief. "I've some books and clothes. I . . ."

"Clothes?" Kurlov laughed. "Clothes wear out. We've included spinning and weaving apparatus, but not enough to supply us with material for clothes."

He paused at the elevator. "Plain John, the magnitude of this venture hasn't dawned on you yet.

"We may be in space for generations. During that time we have to provide all our needs for ourselves. Everything from pins to tools. Not only the items themselves, but the machinery to produce them, and the labor."

He smiled dryly.

"Some of us may not be an aesthetic sight flitting around *au naturel*, but there will be no need of clothes in the constant artificial climate of the ship. So we've decided to dispense with them." He paused, clapped Plain John on the shoulder, saying, "We'll see you at dinner tonight," and moved off down the hall.

A feeling of tenseness gripped Plain John once he reached his room. He strode back and forth across the carpet unable to relax.

When they got him aboard the spaceship, he felt, there would be little chance to escape. He clenched his fist. He had no desire to be a martyr.

If he was going to escape, now was the time to do it.

Plain John set his mouth grimly, went to the door, threw it open.

"Stan," he called to his guard.

There was no answer.

He looked out into the hall. It was

deserted. Neither of his guards were anywhere about.

Whatever had happened, John Bancroft felt grateful for their defection. But he couldn't dispell a curious sense of unease. Had Kurlov called them off because the psychiatrist figured Plain John was no longer a danger?

He shrugged, started down the hall. He made his way upward as rapidly as he could without attracting attention. Every step, he expected to be hailed, but he reached the roof.

There were a dozen helicopters on the roof.

Plain John could feel his pulse throbbing in his temples. He climbed in the closest one, started the motor. The helicopter raised sluggishly into the air.

Someone ran shouting out onto the roof, but there were no shots. In a few moments Plain John had left the sanitarium far behind, swallowed in the night.

He relaxed limply in the seat, thinking. "It was too damned easy!"

The sense of unease intensified. What the hell were they thinking to let him get away so easy. It smelled fishy. He was free, he realized, but instead of the exhilaration he had expected, a numbing worry depressed him.

PLAIN JOHN got rid of the helicopter in a field on the outskirts of the city. He walked to a busline, took the bus into town, registered at a hotel.

He was tired and went straight to bed, but not to sleep. For a long time he tossed restlessly, unable to realize that he was free.

John Bancroft never left his hotel room during the next nine days. He had his meals and the papers sent up to him. He devoured the papers with considerable more appetite than he showed for the meals. But he was unable to find any news even remotely re-

lating to himself or the cult.

No one disturbed him.

On the tenth day there was an item in the morning paper. John Bancroft read it with a peculiar feeling of emptiness.

The Secretary of State, the article revealed, had gone on his vacation and could not be reached for the next two weeks. That was all. But it brought sharply to Bancroft's mind that today was the sailing date which the cult had set.

For the first time since his escape, he felt safe to go out. He shaved and dressed and descended to the street.

The first person he ran into was Smithers, a young engineer with whom Bancroft had worked on the ship.

He tried to draw back into the hotel, but Smithers had seen him and called, "Bancroft!"

Plain John decided to put the best face on it. He could get rid of Smithers easily enough, and register at another hotel.

To Plain John's astonishment, Smithers pumped his hand enthusiastically, said in a hearty voice: "It's good to see you, Plain John. They said that you'd lost your nerve and run out on them. Fact is, I've a fondness for Mother Earth myself."

Plain John stared at the nut brown face of the young engineer, his mind trying to understand Smithers' words.

"You mean that you've left them too; and they let you?"

"Sure. Why not?" The young engineer looked sheepish. "Have you had breakfast? No? Come along then. I'll stand you to breakfast."

Bancroft allowed himself to be carried along into a restaurant. He ordered coffee, bacon, eggs and toast.

"What time does the ship sail?" he asked Smithers suddenly.

"Noon. They believe the trail will be less evident in daylight, but it's going to-hast hell out of the sanitarium anyway. I doubt if there'll be a stone left standing."

"Blast?" Plain John started guiltily. "Oh. You mean the jets." He began to wonder why Smithers had decided to remain on Earth. Smithers didn't know the ship would explode. Smithers still must believe that the cities of mankind would be razed by atomic bombs and shell fire.

"Then you've decided to chance the atomic bombs?" he asked Smithers shrewdly.

The tanned features of the young engineer looked concerned.

"Yes," he admitted. "Frankly, I intend to build a lodge in the mountains. When the nations start popping at each other with robot atomic bombs, I'll try to weather it out. I'd rather do that than spend the rest of my life in a spaceship trying to reach another star."

"TRYING to reach another star?"

Plain John echoed blankly, and set the fork full of scrambled eggs back on his plate, untasted.

Smithers looked at him queerly.

"Don't tell me you never were told what they planned to do?"

Plain John slowly shook his head.

"Well I'll be damned," said Smithers wrinkling his forehead with a frown. "Every time they've attempted to build a peaceful civilization where they could pursue their study in safety, wild hordes of barbaric Earthmen have swept over them nullifying their labors."

"Barbaric Earthmen?" echoed Plain John dazedly. "A peaceful civilization? But—but I thought their purpose had always been to conquer Earth and subjugate us."

It was Smithers' turn to look sur-



prised.

"Good Lord," he protested; "how could you think that?"

"They set up their first colony in Atlantis and tried to rediscover the knowledge lost in Azlanutis, where they'd come from. Then the Azia, a barbaric horde from the South Pacific overran Atlantis and Central America.

"The Aztecs are a remnant of that blood thirsty race from the Continent which has since been called Lemuria."

The young engineer was reciting the history as if it had been learned by rote.

"The fall of the tertiary moon destroyed Atlantis and most of the cult. Then they tried again in Egypt. But their knowledge was gone. They had to start from scratch. In the end it was the same. Other hordes of barbarians inundated Egypt.

"They tried in Greece until Alexander the Great and his wild Macedonians stopped them.

"Why, man, the whole history of the cult has been the tale of its attempts to civilize and give peace and knowledge to Earth. But we're a wild blood-thirsty lot, I suppose. War seems to be an instinct with us."

Plain John could only stare at him dumbfounded, a sinking sensation in his stomach.

"You—you mean that they are trying to escape from Earth now because we're such war-like peoples?"

Smithers nodded. "Just like they originally escaped from the tertiary moon. Newton belonged to the cult, and Galileo. I could name you hundreds of others. But you wouldn't find the Caesars and Napoleons and Hitlers among them."

Plain John looked down at his breakfast which had grown cold on his plate.

"Why are they running away now?" he asked in a dead voice.

Smithers lit a cigarette.

"Fifty years before World War II, the cult's men began to split the atom. Fifty years ago, understand. They kept it a closely guarded secret. They were afraid what might happen if such a force got loose in the hands of the irresponsible Earthmen." He blew out a cloud of smoke.

"But when the forces of Nazism poured out of Germany, they were afraid the barbaric hordes would inundate the world again. They released part of their information about atomic power to the military.

"You saw what happened."

PLAIN JOHN nodded. He could believe this. He had met and worked with Grossard, the nuclear physicist.

"But what decided them to leave Earth for another star system?"

Smithers shrugged.

"They realized what men would be able to do to themselves the next time their ungovernable war-like passions were aroused. They were afraid that the next time every vestige of civilization would be wiped from the planet."

Smithers glanced at his watch.

"Good Lord," he ejaculated; "it's ten thirty. I had an appointment at 10:15. I've got to rush." He snatched the check, saying, "Goodbye now; look me up," and was gone.

Plain John stared in consternation at nothing. He made no attempt to rise. His mind was going around in circles.

Even yet he couldn't quite convince himself that he had heard Smithers right. But the man's words had held the ring of truth. And the more he thought about it, the more convinced he was that he had been horribly wrong in his judgment of the cult.

He was struck by a sudden thought.

Judas! The ship was scheduled to sail at twelve. The blood of hundreds of innocent men and women, whose only

ambition was to colonize a new world, would be on his hands. And it was ten forty-five now!

Plain John leaped to his feet, upsetting his cold untasted coffee, headed for the nearest phone.

He got through all right to the sanitarium, but no one answered. He could hear the phone ring and ring.

With growing despair, he put the receiver back on the hook, glanced at his watch. It was eleven o'clock.

The taxi drew up before the gates of Kurlov's sanitarium. Plain John flung a bill at the driver, leaped from the cab.

The gates were locked.

He ranged along the wall until he found a tree growing close. He shinnied up it, snagging his gray herringbone suit, crawled out on a limb and dropped to the ground. With a grunt, he started at a dead run across the close cropped sward for the drome across the lake.

There was a sharp pain in his side, his breath whistled between his teeth, his nostrils were distended.

He reached the sealed port in the ship. There was no one around. The ship lay in it's cradle, silent, unmoving like a tremendous bomb.

It was 11:50.

Sudden curdling fear gripped Plain John's bowels. At twelve the ship would blast off for space. Everything in a radius of miles would be annihilated by the rocket blasts.

He found a sledge hammer, began to give the sturdy metal of the port great resounding blows with the sledge.

He paused, the sweat running unheeded down his forehead.

THE ship remained silent as a tomb. A sense of helplessness descended over him. Then a realization of his imminent peril drove him to crashing the sledge against the port like a mad man.

The door in the ship opened suddenly. Plain John almost fell through the port.

Kurlov got him by the collar, yanked him sprawling inside, slammed the port shut, and sealed it.

"The power!" Plain John gasped. "Don't push the power past the safety factor or the ship will explode!"

He was conscious of a deep roar, a sense of weight and knew that the ship was off. He staggered to his feet.

"What?" shouted Kurlov in alarm.

Plain John wasn't too confused to give himself away. "I just remembered it," he said in a rush; "we're safe up to a twenty percent utilization of the binding energy of the atom. Beyond that the chain action of the disruption will extend to the ship itself!"

Kurlov leaned weakly against the bulkhead.

"Thank God, Plain John, you reached us in time. We're heading straight out from the solar system. We'd have used all the power obtainable if we hadn't known!"

Plain John heard a throaty laugh from up the corridor. He saw Myrrha regarding him in a strange manner.

"So the prodigal returns," she said in a voice which betrayed her gladness in spite of its flippancy. "Trot out the fatted calf, Dr. Kurlov."

Plain John grinned. Looking at the girl, he decided then and there that it would be just as well if she never learned how he had planned their destruction.

The rest of their lives, Plain John realized, would be spent aboard the ship as it journeyed outward bound to the stars. He didn't want anything to come between him and Myrrha in the strange times ahead.

Myrrha repeated in an odd voice: "The prodigal *has* returned! He's Baldrik!"

A puzzled expression swept across Plain John's features. Was he Baldrik? He certainly wasn't the same studious young medic that he had been before the experiment!

That person seemed almost a stranger to him now. The personality of Baldrik had crept over him so insidiously that he hadn't recognized the change taking place in himself. He said:

"I—I don't know."

"Never mind." Kurlov clapped him on the shoulder. "Bancroft or Baldrik,

whichever you are, you're one of us now. Myrrha will show you to your quarters. I have to get up to the control room," and disappeared down the passage.

"But," began Plain John, then grinned at the black haired girl. "Maybe I'm both," he said and swept her into his arms.

"I feel," said Myrrha a few moments later, "like a bigamist. But that's not without a certain advantage either!"

THE END

## HOT STUFF!

By G. N. CORLISS



ONE of the principal occupations of man has been the making of high temperatures. From the simple wood or charcoal fire to the latest electric arc, man has continually sought to create hotter and hotter temperatures. In conventional industries today, temperatures that are almost unthinkable are used. For example, consider steel-making. Inside a blast furnace, a pyrometer may read three thousand degrees. In an electric welding flame or the flame of an oxyacetylene torch the temperatures will be still higher. In light of these terribly impressive figures we are prone to ask, "Is there a limit to a temperature that can be attained?" The answer, is "Apparently, no."

On earth the highest conventional temperatures obtained are those in the cores of explosions. When a bomb of TNT goes off, can you imagine what the temperature must be at the center of the explosion? It is hardly conceivable.

When really high temperatures are discussed we must leave the earth and go off into space to find temperatures that are worthy of us. Our own sun, it is estimated, has an internal temperature of some ten million degrees! This is easily understandable when one recalls that the sun is literally an atomic bomb. While its transmutation is that of hydrogen to helium rather than uranium or plutonium to barium, it is still the same sort of an intra-atomic reaction. As a consequence, the temperatures so existing are inconceivable. But clever Man, in what may eventually amount to his stupidity, has duplicated the effect in his atomic bomb. Can you dare to imagine what it must be like at the core or center of the explosion of an atomic bomb? Matter is no longer matter in the sense of the word as we know it. In the first place there are no conventional atomic and molecular systems left. All the electrons have been stripped from the nuclei in an atomic explosion, and the nuclei themselves are no

longer stable. They are breaking up into other nuclei. All that matter is in the center of such an explosion—the word is too mild to use—is a horrible mixture of protons, electrons, terribly-hard x-rays and perhaps even cosmic rays. These latter have often been called the "birth-pangs of matter being created" or matter "dying."

CAN SUCH temperatures be measured? Of course, because of the very fact that we are able to discuss them it must be true. But how? You can't put a thermometer or a pyrometer in the atomic bomb! True, you can't hut, you can observe the radiations and photograph those that are given off, and anyone who has the most rudimentary knowledge of such spectroscopy will tell you that with that knowledge you know what is going on. The principle is simple. The higher the temperature of a hot object the more nearly white the light emitted from it. It's that simple! When we look at a hot piece of metal, we know that it starts to glow a dull red as it warms up—then gradually it shades through orange, yellow, green into blue. Then it is hot.

In observing an atomic explosion wherein our highest temperatures are found the theory is the same. We can't look directly so we photograph, or use photo-sensitive cells and measure their output. Presto, we have the measure of the heat!

Apparently then it is impossible to say that there is such a thing as a definite limit to temperature, though we can see that in our experience it is a restricted affair. In some atomic furnaces, the stars of course, internal temperatures have been estimated to be as high as one hundred million degrees! That should be enough for anyone. Very likely though, Man with his almost fendish ingenuity, will find some way to devise even higher and hotter temperatures. Perhaps he will be the fuel—he certainly is the fool!

# SCIENTIFIC

The Karibs hold a long list of traits very similar to the Megalith including black pottery, a sacred fire, a reverence for shells or rocks of volcanic origin, a long list of names for a volcanic deity resembling Tame-na, evening star importance, ritualism connected the Pleiades, and most strongly, an individual bark-canoe, sea totems and a face in a dragon's jaws.



We have every reason to suspect the "southerners" of Decodah to have been either Itrats or Karibs. Wissler finds the Iroquois once drove through the Siouxan ranks, but that the Sioux went through Algonquin tongues like a wedge up the Missouri River and its tributaries.

The serpent mound in Ohio points to the fact that a still more cultured people preceded the Turtle Totem of the Itrats. The Mayans preserve a memory of the Chanes-Itrats War, with the Turtle as an oval at the head of the snake. They are symbolized in the Mounds.



The astronomical knowledge of the Mayans seems to have been lost in the time of the Itrats, since the pyramid, which in the earliest ruins was orientated, became merely the basis for a temple, suggesting a lack of understanding of its use. Lack of such monuments in the Mississippi valley indicates these accomplishments were lost as the Turtle moved north.

# MYSTERIES

## THE DEGENERATING KARIBS

By L. TAYLOR HANSEN

**Does the answer to the degenerating Karibs lie beneath the Caribbean? If so, it may remain a mystery**

PERHAPS the most puzzling fact in all the labyrinth of Amerind study is the continually degenerating culture of the Karib Tribes. The answer to this mystery may lie under the waves of the Caribbean, and it may, therefore, always remain a mystery, but the very fact that it exists, is decidedly significant.

By the name Karib, used in the broader sense, I mean the general Atlantic Amerind long-head, with a certain number of culture traits in common. His parent culture was apparently reared upon the Megalith, for all of the Megalithic traits are his, save perhaps mummification of the dead and the lost art of megalithic masonry.

Yet though the ancient Snake and Tiger may have been his parent, he seems to have added a number of his own traits to the long list of megalithic likenesses—black pottery, a "sacred fire," a reverence for either shells or rocks of volcanic origin, a long list of names for a volcanic deity resembling Tamara, evening-star importance, important ritualism connected with the Pleiades, the individual bark-canoe (a strong Karib characteristic in Matto Grosso), sea-totems, and the symbol of a face looking out of a dragon's jaws, to mention a few.<sup>1</sup>

Upon this fundamental background, millenniums of change, conquests, different environment, history, and the mingling with alien peoples, has affected the individual destinies of the Karib Tribes. In the matter of boat-building, for example, it is hard to distinguish Karib from Nahua. The long dugout which Columbus sighted off of the Mayan coast and which quickly carried the Mayan chief up to the Spanish vessel,<sup>2</sup> as its fifty oarsmen rhythmically cut the water, may have descended from either group of ancestors.

Brasseur de Bourbourg, that intellectual Frenchman of the last century, whose knowledge of the ancient Amerind tongues, and of the ancient manuscripts seemed to have had the effect of turning a scientist into a theorist, perhaps lost his perspective over the Karibs.<sup>3</sup> The problem of the degenerating Karib culture, which he was the first to note, was undoubtedly the main reason for his leaning so completely upon the Antillean-Atlantis theory.

Brasseur, as most authorities term him, did not realize the extent of the Karib Tree, which, though it may have had its roots in the Caribbean, has networked its branches so deeply into the substructure of both continents. Yet taken in mass, the traits which Brasseur first pointed out are now even more evident. It is a culture in which the savages did not come first, but last.

In Mississippi, for example, we have every reason to suspect that the "Southerners" of De-codah were either Itzas, or some related branch of the Karibs. The conclusion of Wisher, after studying the language map of the region, are illuminating. He finds it obvious not only that the Iroquois once drove through Siouan ranks, but that the Sioux went through Algonkin tongues

<sup>1</sup> Some of these seem to be Megalithic or typical of some of the Megalithic Cultures.

This Mayan Skellog is described as having a canopy which shaded the Mayan chieftain from the hot rays of the tropical sun. It had made a rather rapid journey of some fifty miles to meet the Spanish.

<sup>2</sup> Dugout canoes hollowed from a single log are typical of both the Nahuas and the South Seas. Since the Mayans claimed both Chanes and Nahuas ancestors, it is difficult to see which side had this type of war-canoe, though possibly it had been used by both. The Mayans claimed at the time of the conquest to have had a "small descent" (few in numbers) from the Eastern Sea and a "large descent from the west."

<sup>3</sup> Brasseur sometimes made two translations of the same script, most students believing that his second was colored by his increasing desire to further his Antillean-Atlantis theory. In justification for Brasseur, however, it is the belief of the present writer that one can make at least three translations of most ancient scripts, or, let us say, three interpretations, due to the heavy, wagon of allegory in which all Amerind legends are encased.

like a wedge up the Missouri River.<sup>4</sup> He further elaborates on Western members of the family connections of Iroquois, Caddo Muskogean and Sioux by remarking that this "gives a family tree, or a kind of hazy tree, suggesting that the cradleland for these families was the Southeastern United States, and that at one time they held the whole southern half of the U.S. from California to the Atlantic." Thus in the kinship of languages is to be found either a trace of that Karib homeland, or of Black Tortoise conquests, or of both.<sup>5</sup>

Not all authorities are agreed as to the kinship of these tongues.<sup>6</sup> The *Encyclopedia Americana* quotes authorities as finding a connection between Siouan and Keresian, but no authority has seen as yet the connection between Zuni and Keresian except the Indians themselves.<sup>7</sup> They have a legend which is an empirical explanation for what they recognize as a language-kinship.<sup>8</sup> The Seri recognize a similar kinship with the Yaqui tongue, while the name "Yaqui" is an old one in Karib terminology.<sup>9</sup> Nor should it be overlooked that in most of the Karib Tree, Shaman and Caique are the titles of the Peace and War Chief, and these are purely Karib terms.

It is no wonder that Brasseur has put forth the theory of a continually degenerating civilization, caused by a continually submerging home-

land, whose area of liveable land became smaller with each submarine disaster, even as the territory shaken in the series of eruptions at the turn of the century in the Caribbean is known to have been reduced.<sup>10</sup> The Karibs themselves on St. Vincent Island seemed to retain memory of a long series of similar disasters when they confided to the young teacher, who later perished with them in the eruption of their Fire-god, that it had been ordained by the ancients that the Karibs, who had always worshipped fire, were to perish periodically when the Fire-god awoke and thundered.<sup>11</sup>

It is indeed a far cry from the cultured Itz'at to the wild savage who pursued the Aruak into the Amazon, and yet all of the evidence seems to point to the fact that a still more cultured people preceded the Turtle Totem of the Itz'es. The Mayans, who in their histories preserve a memory of the Snake-Turtle, or the Chanes-Itz'es War, are undoubtedly seated upon the scene of the conflict. Decoudah informs us that the two came together into the Mississippi and points out in the Mounds where they are symbolized, the Turtle always as an oval at the head of the Snake.

Yet in spite of the magnificent learning of the Itz'es culture, it presents certain aspects of degeneration. Not only did the Mayans use four intricate calendars, make use of the zero for a thousand years before Europe, but the Metonic Cycle of the Greeks, which was supposed to be for them a great achievement, was apparently the basis for one of the Mayan calendars.<sup>12</sup>

All this would argue a vast astronomical knowledge, yet, in the time of the Itz'es, the pyramid, which in the earliest ruins was orientated, became merely the basis for a temple, suggesting the loss of understanding of its earlier use.<sup>13</sup> The Turtle, however, still made roads, used hewn stone, had a hard cement and decorated with stucco. The lack of such monuments in the Mississippi Valley seems

<sup>4</sup> From *Indians of the U.S.*, "At this point it may be of interest to know that some linguists claim a relationship between Iroquois, Caddo, Muskogean and Sioux. Further, they would include a number of small tribes like the Fuchi, the Chitmachas, Attacapa, Karsakawoa and the Ton Kawo along the Gulf Coast of Louisiana and Texas; finally, in California, such tribes as the Yana, Karok, Shasta, Yuki, Pomo and Yama, a group to which the name Hakan is given. This gives a family tree, or a kind of hazy tree, suggesting that the cradleland for these families was the southeastern United States, and that at one time they held the whole southern half of the U.S. from California to the Atlantic."—C. Winkler.

<sup>5</sup> See Article — *History of the Black Tortoise*.

<sup>6</sup> Radin does not adhere to this general structure in his "*Genetic Relationship of the North American Indian Languages*." His classification of Winnebago as Siouan (page 2 of above) is decidedly revolutionary. Most authorities consider it Algonkian.

<sup>7</sup> See *Zuni Legends*, by Cushing.

<sup>8</sup> This legend explains why the people of Aceme now speak such poor Zuni that it is difficult to understand them.

<sup>9</sup> There is a Yaqui River on the old maps of Cuba. Its meaning was explained as "Sacrificers."

<sup>10</sup> See "*The Story of Martinique and St. Vincent*," by Wm. A. Garesche.

<sup>11</sup> Same source.

<sup>12</sup> This may have been Nahua learning, however. The Greek Cycle, which was an equation of nineteen tropical years or two hundred and thirty-five lunations, or 6,940 days, which has been regarded as a most remarkable fact of astronomical observation, was used for more simply by the Mayans, since one Katun minus one Tzolkin gives exactly the required number of days. Since the Tzolkin seems to have a possible Nahua descent this may be traceable to either imported Nahua learning or the conclave of astronomers called after the beginning of Tutul Xiu rule.

<sup>13</sup> It seems to the present writer that its use by the Chanes was that of a great sidereal clock.

to suggest that these accomplishments were also forgotten as the Turtle migrated away from its ancient center.

THE confusion in Mayan records seems to begin with the conquest of the Tutul Xius, who, because they give the name of Nonoual as the city from which they started their migrations, definitely mark themselves as Nabuas.<sup>14</sup> In some ways, the story of the Tutul Xius parallels that of the parent Nabuas. Both types of annals imply that the newcomers were at first welcomed by the older power, but that later they overthrew their hosts and took control. Furthermore, both records suggest that, after taking control, the newcomers held a great consultation of astronomers and rearranged the calendar. Perhaps that is what the Mayans meant by the "changing of the times." If this is the case, were the Itz'es, and the older Chanes or Cocomes of Mayan antiquity, the Quinames or Nahua legend? Or, carrying the case still further, was the name "Maya" introduced by the conquering Nabuas?<sup>15</sup> From the foregoing it is to be seen that the "age" of one hundred and four years, mentioned in the Nahua Migrations, is similar to the Sacred Calendar of the Mayas from which the Aztec calendar seems to be partially derived. Are the other calendars, then, of Quiname derivation?<sup>16</sup>

Of one thing we are certain, the Karib Tree has its roots in the depths of antiquity. According to their own dates, Mayan history began on October 14, 3,373 B.C. (The oldest date to be discovered so far is that at Tuxtla which is 98 B.C.) We can well believe their statement that they had lived most of their historical existence in another land. Their culture is old when it first



Key to the Mayan Glyphs, from Bishop Lamda, after Brasseur de Bourbourg.

It is ironic that the man who destroyed the Mayan books, Bishop Lamda, should have formulated in the hours of regret which may have followed, this key by the means of which the glyphs may some day be read. Brasseur, who spoke Mayan fluently, was able to use it and obtain the content. It is considered by most modern scholars to be fragmentary with many signs lacking, but *cum hoc* was deciphered with less of a key than this.

After the study of the Aztec and other day-signs, one begins to realize that the Amerind took delight in varying one form, which however, may be recognized by most or sometimes even one characteristic. (See The Delineation of the Day-signs in The Aztec Manuscripts by T. T. Waterman, Univ. of Cal. Press.) For example, once you have learned the characteristics of the Earth-Monster, it is not too difficult to identify.

It seems that the study of these might be similarly pursued. A seems to consist of some conventionalized animal (fish?) with an upraised head and curved body, while H is apparently two bundles of cones or something bound together, etc.

comes to our attention.

Yet this is only the foam on the top of the wave. Below it the entire Karib Tree with its interlaced branches suggesting an ancient time-separation. Gatschet, quoting from an authority I am unable to obtain, mentions a population of Karibs in the Mississippi.<sup>17</sup> By this he may have

<sup>14</sup> *Monoual* is apparently one of the Nahua Tribes driven from Tollen after the insurrection. Sahagun gives the assemblage of astronomers called by the Nahuas for re-arranging the calendar as the *Nanahuatin*, while Brasseur says that the assembly gave the new chronological period the title of *Nahui Olin*. It is interesting in this connection that the Tutul Xius gave the direction of their migration into Mayan territory as from south to north, thus giving us a definite hint as to the location of the Nahua Tollen.

<sup>15</sup> Other similarities which come to mind are mainly the arguments which took place as to which was the most ancient, the Itz'es or Tutul Xiu on one hand, and on the other, the Nahuas' claim that the Quinames were proud, refused to work, and enslaved them. (See *Itz'itsochil*.) Both records claim that the guests overthrew their hosts by what our present militarists would term a "coup."

<sup>16</sup> One must admit that the Nahua calendar also presents certain definite aspects of degeneration, or ancient knowledge in the process of being lost.

<sup>17</sup> "The rest of them, like Yagua and others, seem to be of Caribbean origin, and a transient or stationary population of Caribs is mentioned by Hernan, *Catalogo de las Lenguas* 1, pp. 356, as having lived in the Apalachian country."—Gatschet in *Migra, Legend of the Creeks*. In the opinion of the present writer the name "Yagua" is far closer to the classical "Nahua" than most Karib names, and may be, therefore, of that derivation.

meant the Natchez, who, it should be noted, carry one of the names borne by the last known Mayan monarch, the other one being "Cocom," which is the ancient name for "Serpent." This name is peculiarly widespread, being "Coatl" with the Aztecs, "Kooti" among the Quichuas of Lake Titicaca in South America;<sup>12</sup> again, and the Cocom of the Mohave Desert. In English, the ancient Serpent name for their kings survives only in their favorite drink.

That this name has survived as much intact as it is, can only be laid to the preservation of ritualism. The languages, on the other hand, show a vast time-separation. Some authorities have suggested that Indian tongues may change more rapidly than the Aryan. (Naturally the spread of the Aryan tongues, whose time-separation we can more or less measure in years, becomes a means of computing the antiquity of time-separation here in the Americas.) Yet this fact is denied by the eminent Kroeber, whose researches have not allowed him to share this point of view.<sup>13</sup>

Speaking of names, the ritualistic names for the Pueblos are decidedly Karib in type. Remembering that "Ka't" means "people," we have: for Acoma,<sup>14</sup> "Ka't Zima"; for Santa Ana, "Tamanya"; for San Felipe, "Ka't Lilita"; and for Laguna, "Ka't Walk." The latter Pueblo is located near Wako Canyon, which surely reminds one of the name for the Great Reformer in the jungles of Matto Grosso and among the Karibs of Central America. Nor is this all. The Keresian gods are known as "Ka't Zamna." No wonder that Wistler feels the Pueblos show definite Mayan affinities!

One of the most interesting ceremonies of the Zuni is their Winter Solstice Ceremony, known as "Itiwana," which, their story-tellers say, is the name for one of their former homelands. If one will place his finger upon Zuni territory upon a map, an interesting fact comes to light. We see that the Zuni country lies in the highlands of New Mexico between the headwaters of two rivers. To the west is the Colorado which drains into the Gulf of California. To the east is the Rio Grande. Following this down toward the Gulf of Mexico we see that it enters that "Southern Sea" of the Ancients just about two hundred

miles above the delta of a river with a most arresting name for an Amerind archaeologist—the Pamuco River of Mexico.

If it is possible that the fall ceremony of Thanksgiving among the Puets of the Mississippi was held in memory of the ancient founding of a colony by Votan in the northern Mississippi Valley, was the Winter Solstice Ceremony of the Zuni in commemoration of his establishment of the second capital, which was probably founded around the Gulf, a month or six weeks later? Is this the time the Zuni have in mind when they sometimes say that such-and-such a thing happened "when the people lived toward the south, and were one people with the Mexicans"? (That they show no affinity to the Aztecs, however, is quite apparent to all authorities.)

Perhaps Baldwin was right when he said that we do not have the right to criticize the ideas of Brasseur de Bourbourg unless we have a knowledge of the ancient tongues and of the early manuscripts at least equal to his own. It is true that Brasseur left us a key to the glyphs that might someday unlock the doors which now are closed. That key, which has lain so neglected since the death of its master, has hardly been touched by later students.

Yet it is also true that the Karibs may be studied with equal value from many other angles. The truth of what happened is all we seek, no matter whether it lead to a Central American, a South American or a Caribbean homeland. The true relationship of what seems to be a Karib Tree is all we desire. That truth should gradually be brought to light through many lines of investigation.

One of these lines is surely a little community of a few hundred souls, which has apparently managed to live through millenniums of prosperity and adversity, probably amalgamating with newcomers, but retaining some of the ancient ritualism. Because of them, and similar communities, science has been able to study its archaeology in the flesh.

Thus, through either the study of languages, or pottery, or the dances of these people whose gods bear names already ancient when Socrates argued in the Agora of Athens, and which, echoing down to us through the corridors of untold eras, are a fragile link to a past which goes beyond all known history—Science may someday be able to lift the mists from twenty to fifty thousand years, and reveal the story of the Cocomes or Chanes, whom their enemies called Quinames, and who are known to us as the members of the Karib Tree.

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<sup>12</sup> *Island Kooti on Lake Titicaca is the sacred "Snake Island" of the ancients, where many fascinating ruins are to be seen.*

<sup>13</sup> Kroeber states: "It is clear that the languages of the Colorado have changed comparatively little in three centuries. The same permanence applies to the speech of the Chumash of the Santa Barbara Archipelago (California coast); the discoverer Cabrillo's forms tally rather closely with the data obtained in recent decades."

<sup>14</sup> *Acoma resembles the Pacific Coast names for the Great Reformer, such as Tacoma, Tahcops, etc.*



# PROBLEMS of SCIENCE

By L. TAYLOR HANSEN

## THE ENIGMA OF COMPRESSION



THERE are several theories of rifting, which is one of the enigmas of geology. None of them fulfill all the aspects of the Atlantic rift as it appears to have happened, yet by combining the theories of Daly and Willis, the present writer presents an idea of how the sialic arch of the Central Ridge could have been dropped by the escape of its supporting magma from underneath through the cracks of the rift and the volcanoes upon its surface, while at the same time, the continental shelves to either side, moved away.



TO OUR grandfathers, compression was no enigma. They knew that the earth was cooling, or thought that they knew it. They knew little about radioactivity and its ability to heat rocks. Their geology was so simple compared to our geology today that one can almost envy their complacency. The Contraction Hypothesis explained everything they knew so beautifully.

John Joly of England was one of the first geophysicists to place a bomb under this well-ordered world of the contractionists. It was his conviction that the earth has within its crust enough radioactive elements to store up an accumulating amount of heat for some thirty million years, until the melting point of basalt is finally reached. There follows, says Joly, a period of tremendous volcanism which brings thermal release for another cycle.

Although Holmes disagreed with Joly at first, yet later he admitted that a greater amount of crustal heat was stored than escaped by radiation. This led him to the theory that great currents like rivers of burning rock circulated through the magma. He named these as the power responsible for the dragging apart of continental masses. Daly, Jeffries and others have criticized both the Holmes and Joly theories for failing to explain the complex time-structure of either the American or east-west cordilleras. Possibly neither Joly nor Holmes have found the key to the entire story, but that story may be one of extreme complication, in which their explanations are factors.

Thus compression, or mountain-building, becomes one of the enigmas which must be explained by any theory of earth-history which hopes to survive. Strangely enough, some theories seem to give the best explanation for one chain of mountains but collapse against another chain going in a different direction and raised in a different epoch. Wegener once likened the mountains across the Atlantic to "writing across a torn page,"

but forgot that the writing must also be explained. Wegener's theory which gave a good explanation for the American Cordillera, collapsed against the east-west chains and the ranges bordering the Asian Pacific. Taylor's theory of Equatorial Drift which gave such an excellent explanation for the twisting of the Tethys bed up into the peaks of the Alps and Himalayas, certainly failed against the time-complications of the Appalachian-English Cordillera.

The Appalachian-English Range is an enigma in itself. It was first pushed up by northwest to southeast pressure, convex to the southeast during the disastrophism which closed the old Proterozoic. According to Dana, Daly and others, this pressure was renewed rhythmically during the Paleozoic. These extremely high ranges (much higher than the present ones) were then completely worn down. Water began to roll over them, and then during the Tertiary they were again pushed up, but this time from the opposite direction.

The same story may have been repeated in the raising of the Alps. All geologists admit that as they stand, they were pushed up from the Tertiary to the Eocene, but Tutton found some very ancient crystals and suggested that the Alps may have been the site of a far older range, worn down countless millions of years before these dates. (Mt. Blanc, by the way, judging from the amount of soil eroded from its top since its erection in the Eocene, is nine and one half million years old.)

The theory of earth-history which came the nearest to explaining such a double date for the Alps is that offered by Staub in 1928, called the Recurring Contact Theory. It was Staub's belief that the two continental masses in regular cycles slid into each other at the line of the Tethys Sea and again separated. It is true that the Tethys was closed and opened several times, but Staub only had his eye upon the Alpine-Himalayas.

One old range, raised during the Paleozoic, which no theory has explained, is the Argentine-Capes Range running across the Atlantic and the tip of Africa until it is lost in the Indian. This range may have once included Easter Island, that spire of a volcanic mountain top which rises from sunken Albatross Plateau. Daly is of the opinion that Albatross is a fragment of continental sial, as he has found granitic bombs in the lavas of Easter Island.

Another cordillera which no theory has explained is the sunken one in the Pacific whose tops are the present South Sea Islands. There are no granitic bombs on these lava islands to tell us that their rocks of either coral<sup>1</sup> or lava were ever based on granite. However, Beno Gutenberg, of the Calif. Inst. of Technology, working on the patterns which earthquakes make, finds evidence of shalic, or continental rock in the South Pacific. He admits that there is not as much as there is in the Atlantic, or Indian, but there is sial in the southern portion of the world's greatest ocean.

Charles Darwin, known to the average man by his books, "Origin of the Species" and "Descent of Man," is known to the geologists by his momentous work on the corals of the Pacific Ocean. By using the bore to drill through the coral rock on many different islands, he tried to gain an idea of their sub-structure. In almost all cases he obtained only more coral even though his drill went to depths which were at once too cold and had too much pressure to allow the coral animal to live. From these facts he deduced that the greater part of the Southern Pacific is sinking.<sup>2</sup> Such a slow subsidence, he argued, would keep the top of the island in warm, shallow water for the animals to keep on building coral rock. Howell Williams, writing for the U. of Calif. Geol. Bulletin, found that much of the South Sea Island lava contained coral bombs (he particularly studied Tahiti and the Society Islands) and thus he deduced a sunken coral base.

Hawaii (see the accompanying illustration) rests on a long ridge extending some 1500 miles to Midway and Ocean Island. However, here we meet another enigma. Hawaii carries some ancient Triassic flora which lives on no other spot on earth today. The botanists look to the geologists for an explanation of this mystery. How did these ancient plants get to Hawaii in the first place, and how have they survived there throughout these millions of years since the great dinosaurs roamed beneath them in the Triassic jungles of Wyoming?

<sup>1</sup> Darwin found coral as deep as 2400 ft. down. He has convinced Dana of his theory that the southern Pacific once held a continent which sank during the Tertiary.

<sup>2</sup> Howell Williams found much reason to believe that many of the islands' structures were caused by block faulting or rifting.



Map of the Hawaiian Shelf. Inset is the entire reef, 1500 miles long, extending from Ocean and Midway to Hawaii. After Burnsted in the National Geographic for Feb., 1924.

As nearly as it can be drawn, here is the map of that lost land, if it was a continent. It may have been just great oceanic tears, BUT, if this is the case, what about that Triassic flora on Hawaii?<sup>3</sup> Dana is of the opinion that this continent has been sinking since the Tertiary, which would be many million years before man became human.

Possibly the reason that neither Taylor nor Wegener could get an entire picture of what was taking place, was because they could not get away from the earth and view the planet as a whole, from a distance. Taylor held a globe and looked at the Arctic and then at the Mediterranean and India. His glance took in the Pacific but somewhat hastily. Wegener could not tear his eyes away from the Atlantic—the surface contours of the Atlantic. Both were right, as far as they went.

IN ORDER to try to look upon the planet as a whole, let us imagine ourselves to be an observer on Mars, to whom a million years is but a day. We would probably spend years in the unfolding story of earth's orogenies, or compressions, but the story would hold us to our viewing screen with a deep fascination, for we are a scientific observer.

<sup>3</sup> Some of these ancient trees of Hawaii are in danger of dying out. Of one variety of tree, U. of Cal. reported that only two trees were left.

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*According to Daly, the Pacific floor shows evidence of wrinkling and of rifting off due to tectonic cracks. Here we see the Hawaiian Fragment and the Australian Shelf, and possibly, Polynesia.*

Unfortunately, our story begins somewhat late, for the earliest pages of the story have been lost. Let us say that we discovered the planet during a heavy glacial. The place which, untold aeons later was to become Lake Superior, was the pole. Giant ice caps spread from it in every direction. Then the air became heavy with soot and cinders. Lava was being hurled into the heavens as the fiery death from below came to kill the crawling things in the mud and slime of that day. The Appalachian-English range was being born. The fiery death came back at intervals, but they were longer intervals, more days apart for us beside our Martian Screen. Then one day we noted a new range being formed. It began with the usual wave effect. The waves were pushed higher and higher until the peaks began to thunder forth their fiery death. Sometimes the lava broke through great long cracks. We remembered how the lava had welled through these cracks in the old glacial region of Lake Superior in gushes a mile deep. The lava gushed forth again but this time something obscured our view. Of course we could not know that this was the Argentine-Faakland-Capes Range destined to be later drowned in the widening Atlantic and Pacific Oceans. We could only see that the range was pressed up by giant unseen hands pushing it from the north. Some days after that another glacier began to form, this time at the south pole.


Millions and millions of years had passed by on the earth. Since our viewing screen was the last word in Martian science, we could easily see the giant reptiles which now roved through the

jungles where we had viewed that glacial in the north. The jungles from Canada to Siberia echoed to their full-throated hunting roars while the giant southern land mass was gripped in the white death. It was a strange world of dripping fern-like trees on the one hemisphere and ice deserts on the other. But one day the fiery death came again.

This time it struck in the south. It melted back the glaciers whose waters poured in steaming rain upon the fiery cracks. Giant, unseen hands began to roll up the western mountains of Australia out of what had always been the sea, up to now. They were being shoved from the west, for the western ranges rose first, followed by the eastern ranges. Next the lava struck the tip of Africa, where the old Cape Range was pushed up again but this time from the south.

Days passed. It was a slow process, hard to follow in sequence, even for our Martian. At times the ice mantle crept back only to be followed by more convulsions and more long and widening tracks in the crust. One thing that our Martian did notice was that every few days the lava cracks and volcanoes seemed to move north in Africa.<sup>4</sup> Finally the day came when he began

<sup>4</sup> Du Toit found that the early Jurassic saw lava break out all over south Africa. By mid-Cretaceous the lava was welling out of the northern part of Africa in sheets from one thousand to four thousand feet in thickness.



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to see the great telltale waves riding out of the crust again. The Tethys Sea was closing and its bed was being crushed up to form the peaks of new ranges. We shall call them the Alpine-Himalaya Cordillera. On the African side they might be called the Atlas. The push was definitely from the south. Almost immediately the old worn-down Appalachian-English range with its crumpled crust was rolled up again and this time the pressure was from the south and southeast.

It was about this same time that the northern continent began to rise out of the ocean where it had been lying in a swamp-like condition. The day of the great reptiles who had ruled these swamps was drawing to a close. A tiny creature called a mammal, with warm blood, hair on its body to withstand the cold, and a way of bearing its young alive instead of laying eggs, suddenly found itself the master of the northern mass.

Two parallel rivers took their course down that mass from the now high Appalachian-English range, cutting deep gorges as the land mass rose under them. If there is something familiar about this part of the story, as a Martian scientific observer, we probably have already begun to anticipate the coming glacial in the northern mass, to be followed by the fiery death from below, which now strikes in the north.

Perhaps like many scientists of earth, our Martian observer has begun to think of this glacial

in the north, high mountains and lava followed at dying intervals by a spread of the swamps and seas; a repetition in the south followed by even fiercer volcanism—the spreading seas of the Oligocene followed by the fiery Miocene which in itself was a sort of prelude to another northern glacial in the Pleistocene and more volcanism as "Earth Rhythm." However, there is a definite rhythm of pattern also. It is not a confused thing. And if it is not a chaotic thing, then there must be a reason. But this reason is still eluding us. A chaotic thing does not need explaining, but this thing seems to be following laws. What are they? Why? That is still to be learned, but only by bringing into the master mystery of all time, clue after clue.

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# The CLUB HOUSE

Conducted by ROG PHILLIPS

*Where science fiction fan clubs get together*

**D**URING the history of fandom several attempts have been made to organize it into a single united group. None of these have completely succeeded. Maybe none of them ever will. The individual appeal of sf and fantasy is too varied to conform to any single group or organization. The wants of the members are too different.

Yet, two such organizations are in existence today, and each of these still exists largely because, each in its own way, it tries to answer this need for a sort of master organization. These two are the NFFF (THE NATIONAL FANTASY FAN FEDERATION), and FAPA (FANTASY AMATEUR PRESS ASSOCIATION).

Neither of them covers all of fandom, and neither of them IS fandom, yet the two together are largely responsible for fandom holding together, and also for the more important achievements of fandom as a whole.

Each stresses somewhat a different phase of fan activity. Each draws its membership entirely from fandom. Interpenetrating these two organizations and spreading out beyond them is fandom proper, with its numerous fan publications whose ownership and policy are strictly the property and responsibility of the individual who starts them.

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Membership brings you, among other things, a chance to take part in many of fandom's greatest enterprises, such as the annual convention of fans. This convention was held in Philadelphia in 1947, and will be held in Toronto, Canada, in 1948.

Membership in NFFF gives you a discount on some books that are printed, and also on all NFFF publications. For example, the **FIRST FINLAY PORTFOLIO**, published by Walt Dunkelburger, 1443 4th Ave. S., Fargo, N. D.; \$1.00. To all NFFF members, 50c. Contains eight of Virgil Finlay's finest masterpieces that have appeared as illustrations for stories in magazines. They are of fine quality, suitable for framing;  $8\frac{1}{2}$  x 11 inches.

The NFFF appeals to the average fan more than any other group in fandom. Its aim is to bring the publishers, authors, and fans closer together. Its annual conventions are primarily for that purpose, and authors and editors are there and give speeches. You get to meet such notables personally.

**FANTASY AMATEUR PRESS ASSOCIATION (FAPA)**; \$1.00 per year, membership; but **PLEASE** note the following: in order to join FAPA you must fulfill membership requirements. These requirements are that you must have material written or drawn by you published in two fanzines located in different cities in the 12 months prior to your application; or you must have published a fanzine of your own in the past year. To remain a member in good standing, you must contribute to the mailings a minimum of eight pages  $8\frac{1}{2}$  x 11, per year, or the equivalent of that number.

The purpose of FAPA is to provide a means of expression for fans who join it, and an audience of highly critical readers who will read and appreciate what you write or publish. Four times a year FAPA members receive a massive envelope containing the quarterly output of their fellow members.

If you become interested in writing and publishing a fanzine of your own, FAPA is the ideal way to begin. It gives you a ready made audience. It gives you the experience of its members, and also material for your fanzine if you want it and it's available. You get a bonanza of publications four times a year. All it costs you is the buck for membership plus whatever you spend on your own book.

The four mailings a year cost well over a dollar to put out. They don't cost FAPA all that, but those who print the many fanzines that go into the mailing. To keep this from becoming prohibitive, membership is strictly limited.

Now that you have read all that, if you are interested in this facet of fandom, write to either **Charles Barber**, 1057 S. Normandie, Los Angeles 6, Cal., or to **Francis Laney**, 816 Westboro Ave., Alhambra, Cal., for further details. There is no salary connected with the offices these two fellows hold in FAPA. If you write and do not enclose a stamped envelope for a reply, don't feel hurt if you don't get a reply. They may be staring guiltily at

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a stack of similar letters and wishing they had the money to pay postage for replies to all of them.

\* \* \*

We held back on some of the fanzines in last month's list because we thought maybe we wouldn't get enough new ones to introduce for this month. (This is being written just before Christmas, and no doubt all the faneditors are too busy shopping to put out another issue.) We'll give the ones not mentioned last month first, then on to the old timers (those who were introduced last month).

**NECROMANCER:** 10c copy, 6 for 50c; David A. MacInnes, Box 1847, Memphis, Tenn. "Published when time permits, and as the spirits (your choice) move us, by 2½ ten—ye editor, his wife, and their Scotch Terrier." The quotes are from the editorial page. The Scotch Terrier and Mr. MacInnes go on to say, "We are continually on the lookout for material to grace Necromancer's pages, and urge all fan to submit any opus (artwork, articles, fiction, poetry, or what have you) in good taste, that they see fit. All efforts will be given careful consideration for publication in the next or subsequent issues."

Here's your chance to dive right in. You can get a stab at the prizes that will be given for material submitted and printed in the fanzine's during 1948 by this department of *Amazing Stories*, and also a chance to read the brainchildren of other readers.

**SPACETEER:** 10c; 5/50c; Lin Carter, 865 30th Ave. S., St. Petersburg, Fla.; editor: co-editor Bill Paxton, 18261 Oster Drive, Dearborn, Mich., with Associate editor Terry Fitzpatrick, and contributing editor Georcy Campbell Brown. Material for publication solicited.

Lin Carter is quite an artist, specializing in such fantasies as a giant worm with tentacles and the head of a man that has eyes like a telescope goldfish. Fourteen pages of articles, stories, and poems, by names well known in sci/fandom.

**MOLECULE:** 2c copy; an experiment by Walter Coslet in printing a magazine with an addressograph machine! Walter Coslet, or "Coswal" as he is nicknamed, is a member of FAPA and the publisher of *SNIX*, introduced last month. He also publishes *TATOR*: 2 for 5c; which is a good name for a fanzine printed so close to the potato lands of Idaho.

If you desire to get into FAPA, and want to study what that group does, it would be a good idea to get on Coswal's mailing list, as FAPA is his main interest.

**THE BURROUGHS BULLETIN:** published once a month by Vernell and Dorothea Coriell, Box 78, Manito, Ill.; FREE upon request to any Burroughs fan interested. Vernell has sent me the first four issues for July 1947 through October. I can remember the days when I first thrilled to the adventures of John Carter on Barsoom myself! I still think Burroughs is one of the greatest imaginative writers that ever lived.

Vernell says he is really new to fandom, and more of an ERB hug than a fan. Well, in fandom everyone has a right to his own particular slant, and I don't doubt that Vernell and Dorothea will find plenty of fans from *Amazing Stories* that would be glad to get their fanzine. That "free" business bothers me, though. I rather think they don't expect too many to send for their fanzine because of its specialized contents. They may be surprised into going broke, so if I were you I would at least send them a stamp or two with my request for their fanzine, and be prepared to pay a subscription price for future issues. Judging from the four issues I have on hand, it should be worth a nickel a copy. Four to six pages, very well mimeographed. And to you young fans, if you haven't read all of Burroughs' books you aren't really a fan. Go right down to the public library and look them over!

And now to the old timers!

**DREAM QUEST:** 10c, 13 for \$1.00; Don Wilson, 495 N. 3rd St., Banning, Cal.; for November 1947, 33 pages containing seven articles, one verse, and three departments which are The Gas Jet by the editor, Pro-Phile, by Gilbert Swenson, which is a review of the postmag, and Cave of the Winds, the reader department. The cover, done by Howard Miller, the associate editor of *DQ*, shows a highly oared galleon headed toward a strange looking city. A well rounded issue. A series of articles entitled "Let's turn the calendar back," by Rex Ward, is begun. It deals with an analysis of how science fiction has changed over the past few years. Knowing Rex, it should prove very worth while.

**FANDOM SPEAKS:** 10c, 12/\$1.00; 438 Main St., El Segundo, Cal., Jack Clements editor and Rex Ward publisher. A letterzine, containing nothing but letters sent in by the subscribers. Eight regularlength pages. A thoroughly alive letterzine. Dive into the puddle, readers, and subscribe.

**FANTASY TIMES:** 10c, 12/\$1.00; James V. Taurasi, editor in chief, 101-02 Northern Blvd., Corona, N. Y.; Dec., '47: 19 pages with eleven sections including Fantasy in the Theatre by David Kishl, a very good editorial by James Taurasi, and the Cosmic Reporter by Lane Stannard, which discusses current publications. A VERY sensible and high quality fanzine.

**THE GORGON:** 15c, 75c per yr.; Stanley Mullen, 4936 Grove St., Denver 11, Colorado. Fifty-two pages in the Nov. '47 issue, nicely bound in a heavy paper covering. A nice selection of short stories by fans, poems, and articles. The Ebony Tower, by its editor, is a review of current sci/f books on the market. Artwork is of professional quality and reproduction.

**SPACEWARP:** 10c, 1/25c; Arthur Rapp, pub.; 2120 Bay St., Saginaw, Mich.; Associate editor, Bill Grover, 113 N. Porter St., Saginaw, Mich.; Dec., '47. 24 pages with ten features including the Jackpot, by Jack Clements, editor of *Fandom Speaks*, which is very entertaining! Also the concluding half of an article entitled, So You Want





# DISCUSSIONS

AMAZING STORIES will publish in each issue a selection of letters from readers. Everybody is welcome to contribute. Bouquets and brickbats will have an equal chance. Inter-reader correspondence and controversy will be encouraged through this department. Get in with the gang and have your say.



Address Your Letters to:

AMAZING STORIES "DISCUSSIONS," ZIFF-DAVIS PUBLISHING CO.  
185 North Wabash Avenue, Chicago 1, Illinois

## BYRD'S WARM LAKE

Sirs:

In the last few issues of AMAZING STORIES, you mention the "mysterious warm lake" discovered by the Byrd Expedition. What's so mysterious about it? The warm springs and Old Faithful are hot throughout the winter. The Arctic region has a similar body of warm water. You seem inclined to call everything not immediately or publicly explained as mysterious.

This letter is intended as constructive criticism. I don't intend to "knock" your magazine, for I like it very much and look forward to reading more of your fine stories.

Darlington Fadeley,  
35 Perry Street,  
Struthers, Ohio.

*According to the report of the Byrd Antarctic Expedition, the presence of a warm lake on the continent was extremely mysterious, so much so that a very complete exploration is to be made (is now being made) due to the suspicion that it may be caused by radioactive deposits such as Uranium. Certainly this is not the case with the warm springs and Old Faithful. So, until the mystery is cleared up, your editors prefer to call it mysterious. Thank you, however, for your comment. We like our readers to write, good or bad, and your letter says you like our magazine very much. Brother, when you say that, you make us feel pretty good!*—Ed.

## NOPE, GUESS AGAIN!

Sirs:

Am a great follower of Shaver and of AMAZING STORIES. Have been for years.

Take this opportunity to write and inquire as to the following regarding the August issue story "So Shall Ye Reap" by Rog Phillips as well as December 7th Sunday paper concerning the death of Paul P. Stentenburgh, brilliant physicist.

In the story "So Shall Ye Reap," Alex Topanov was a brilliant physicist. Are Topanov and Stentenburgh the same? Both have had undue responsibilities laid upon them by their government.

Second, Rog Phillips—top scientific mind. One who knows of what he writes.

Robert M. Hutchins, chancellor of U. of C. whose article in the December American magazine "The Bomb Secret Is Out."

Both the fiction story "So Shall Ye Reap" and article "The Bomb Secret Is Out" have a running of the same parallel. Are Rog Phillips and Robert Hutchins the same?

This doesn't seem to be just a coincidence. The two stories are written in the same vein. Read them and ponder.

R. A. Morgan,  
31 Hunt Street,  
Brookline 3, Mass.

*You make a good case, but you're wrong. We wish Hutchins would write for us! He's a top man in the University world!—Ed.*

## PHILCOIN RESOLUTION

Sirs:

Help me to clear my good name. I did not write the anonymous letter on page 173 of your January 1948 issue of AMAZING, and I furthermore disclaim all knowledge of it.

The name given is unusual, and in a highly specialized group of people chances are it's even more unusual. Is it my fault that Anonymous chose the name same as mine?

Paula Vreeland,  
7224 Page,  
St. Louis, Mo.

*There you are, and we're sorry you were linked with something you did not do. And, as to that paper against us, we know the truth about it now. It was NOT voted upon by the convention, and in fact was shelved forever by our friends at that convention, who, it seems, number quite a few—the majority, in fact. Therefore, we ourselves retract any hard feelings, and realize that it was not as serious as it might have seemed. In fact, we consider the act of the Convention in shelving the thing as a mighty fine compliment, and showing their true feelings in the matter. It was just a case of a minority trying to sound off, and not getting anywhere. If you want to know the truth about fan groups, read our new department, The Club House, in which we, as editors, allow the fans to*

run things to suit themselves. We've discovered, now that the laundry has been washed, that they're a pretty nice bunch of guys! There'll be no more of that petty stuff, we're sure. We owe our personal thanks to all the fans who worked to patch things up and make this new feature possible. Confidentially, all you non-fan-club readers, we read the department and like it too! Reminds us of our own fan days. And you guys who like to write letters, why don't you "jine up"? Seems to be a whole of a lot of fun! And some of those fanmags look like worthwhile reading to us, to judge from the reviews.—Ed.

### RUN FOR THE HILLS!

Sirs:

Unfortunately I do not have a Ph.D., but I am studying for one. Will I do?

It is true that many things have combined—pseudo-scientists as well—to increase the difficulties and obstacles of those interested in human progress, but I object to the use of your examples; no one seems to be seriously laughing at scientists, especially those who conceived the unprecedented impossible atomic bomb, radar, and the radio-proximity fuse which science-fiction itself condemned as beyond belief. Are you laughing now?

Those weapons are no longer the property of the ordinarily inoffensive and traditionally absent-minded scientists; they are in possession of those of whom you are so obviously a veritable palimpsest, who laugh at science and block it at every turn, refusing to let the scientist keep what he had made and turning it into means of oppression, tyranny, self-assertion, and mass-destruction by war, inefficiency, and sale of highly concentrated and narcotic toxins. What is the mightiest effort of long slumbering nature to inspire terror which these do not evoke and to which these seem so innocuous?

That is history, my friend; tomorrow our children will be reading about it, probably cursing our very names—not for having laughed at scientists who may or may not have been right, but for allowing their brains and weapons to be exploited for such purposes. Though the future may seem misty and unreadable, totally illegible, look into the past and observe; it is an excellent, never-failing oracle which plainly foretells what dire fate threatens worlds which plainly condemn Socrates for inefficiency. Look and shudder with prescient horror; the future is hurtling toward us with nightmarish speed.

Robert Paul Kidwell,  
2600 South Hoover,  
Los Angeles 7, Calif.

Actually, Mr. Kidwell, things are bad! But we hope that they can be cleared up. We're trying our best in these pages to make our readers see straight. And we know they do, because we get many letters from people who are working hard to make this a better world to live in.—Ed.

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Following paragraph: of course, it should have read  $dQ = I dt$ , (if a misprint small understanding is sufficient) but his  $Q = f t_0/t_1 dt$  cannot be only a misprint, but is also incorrect. A misprint, because typing machines do not have integral signs, which MacDonald evidently intended, as I assume the formula means  $Q = \text{Integral from } t_1 \text{ to } t_2 \text{ (not } t_0/t_1) \text{ of } I dt$ . He follows up with a reference to CAPACITANCE where my article mentioned CONDENSER (the apparatus itself, NOT its capacitance). He states that  $V = I/C\omega$ ! and also states that  $X_c = I/C\omega$  where it should be  $X_c = I/C\text{-times omega } (2\pi f)$ . And after the show of ignorance or just mistakes, agrees to the fact that the capacitance required is inversely proportional to  $f$ .

MacDonald's "logical scientific manner" would be too short for a non-informed reader, just as mine is too short for him, but my short popular article could hardly have been made a complete book on the subject, presented as an "idea" for development by those with facilities and the necessary mental equipment.

His next paragraph states that I made "yet another blunder" because I state 3000-3500 cycles instead of 3000-3500 cycles per second! In no other unit of time are power frequencies (and even radio frequencies) measured than per second; rarely are the three words necessary, except perhaps for teaching of beginners.

His following paragraph, that of rotating A.C. generators tearing apart is idiotic! I can see the man has not read beyond the simplest type of rotating machinery or A.C. generators! Furthermore, the frequency is NOT FIXED! I am sure my references on polarizing and rectifying effects would have no meaning to Mr. MacDonald!

Again he "assumes" that I must use one phase instead of THREE, after I explained ONE phase to exhaustion (and why mention THREE, or one, is that all he knows of?).

The mention of short-circuiting an alternator winding by grounding ONE of its terminals shows even more obtuseness, as much as his statement that in a single phase system the potential of each terminal to "ground" is exactly  $\frac{1}{2}$  the potential between the two terminals. That one, he must have invented all by himself!

He did not write such a scathing letter merely to point out that I could not be an engineer (which I AM). To point that out would exhibit his complete lack of education and ethics.

I thoroughly agree with my critic in that my article was NOT MEANT for untrained readers (except as a newsy bit), but only for those that have COMPLETED a course of education, and have what it takes to go beyond present books; and I also agree that my article was quite misleading to him, as it went far above his head.

I will deeply appreciate your publishing this answer in the same section where I was attacked.

Arnold G. Guthrie,  
3401 N. Union Ave.,  
Tacoma 7, Wash.

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learns in school. Only the basic concepts are learned (and sometimes not well). Actual experience in the field then brings out the fine points. In school, you learn to manipulate a single test tube. In the commercial laboratory you may never see a test tube but you learn to conduct or to supervise a great many procedures simultaneously, involving various techniques and using equipment with which you may have had only a brushing acquaintance while in college. Where in college you fiddled around for two or three weeks with one simple routine, in actual experience, you will conduct or supervise many of these same procedures to completion in any one day's work.

In later years, while taking work in Chemical Engineering at one of our leading Universities, I listened to the head of the Department lecture. He is a man who is employed as a consultant, on a very large scale, by industry. He made the statement, in one of my classes, that the new and improved processes and developments were never released by industry until industry had something better than that, therefore, those developments which were given out for publication and for textbook presentation were usually already old and perhaps outmoded when read by the student and that, therefore, the student should look to, the schools for his basic training but that thereafter he must be prepared to gain experience in industry which would quickly surpass and outmode all but the basic concepts he has acquired and that even these were not immune to change.

Recently an Engineer expounded to me quite a little theory regarding, shall we say, elements X and Y. One of these elements occupies a place in the periodic table, both several groups and several periods removed from the other. Yet this Engineer expressed the belief that one of these elements was an isotope of the other. The definition of an isotope is "One of two or more elements occupying the same position in the periodic table, identical in chemical behavior and distinguishable only by radioactive transformations or small differences in atomic weight." Therefore by definition this Engineer could not be correct in his belief. His thinking along this line was "fuzzy" according to the generally accepted ideas. Yet, I must acknowledge that, in general, this man is a very good Engineer. And he does dare to think along lines which are not strictly orthodox. Therefore he may eventually get further than most Engineers. Of these men who have contributed to science and industry, few have been strictly orthodox thinkers or they would never have been able to think their way clear of the accepted old ideas and into the clear light of the way to something better.

You cite various mathematics to prove your points. This is all very well as long as you are free to assume that your mathematics is correct, in its presentation; as long as it is the application of the correct mathematical technique, which fact you must prove (and drawing your attention to your

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statement "of course it should have read either  $dQ = idt$  or  $Q = ft/\lambda$ ,  $idt$ " and you follow by setting up the conditions. Then you state, "However, even if the statement had been worded correctly,  $Q = ft/\lambda$ ,  $idt$ , it would still be incorrect to say from that statement, etc." Are you not then setting up the arbitrary correct equation and applying that to Mr. Guthrie's statement after you and not he has stated what the equation should be? Should you not instead confine your discussion to what Mr. Guthrie actually says? Unless you are telepathic, you can hardly discuss what Mr. Guthrie "meant to say" or what his "equations should be." It is obvious that you intend for your correction to his mathematics and ideas to prove the opposite of his contention) and this leads up to the actual crux of the whole matter; as long as the general and specific mathematics are fundamentally sound. And it is this last point that no one, you or anyone else, can prove beyond all possible doubt.

In fact many of our leading mathematicians are now coming around to the belief that Euclid, upon whose ideas much of your present day mathematics is founded, was not on such sure footing in his mathematical theories after all. So that throws some little doubt on the very core of your presentations.

Well, this was not intended to be a fireside chat. I do believe however, that any and all new ideas should be greeted with open arms, so to speak and explored with genuine enthusiasm to see what improvement and development may be made upon them instead of tearing into them with the idea only of wrecking them and to preserve the old.

Let's hear from you on, should we say, the defense of your own mathematical presentations. Are you justified in its use? Any mathematical concept, in its original presentation, was evolved to explain or to justify a specific effect or end. Several concepts might equally well apply. Then which one is correct? Many concepts have been scrapped. How can you be assured that you can salvage the one you have just used.

I don't have any personal interest in plugging any particular publication but I believe you and many other readers will find of particular interest the book "Magic of Numbers" by Eric T. Bell. I believe this book is published by McGraw-Hill. I am sure it will provide you with much rich food for thought.

Neal C. Butler,  
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